

BALNEO RESEARCH JOURNAL

Vol 11 No. 3, September 2020

Congress Abstracts



**SOCIETATEA ROMÂNĂ
DE MEDICINĂ
FIZICĂ
DE RECUPERARE
ȘI BALNEOCLIMATOLOGIE**

**Societatea Română de Medicină Fizică, de Recuperare și Balneoclimatologie
(SRMFRB)**



**UNIVERSITATEA DE MEDICINĂ ȘI FARMACIE
GRIGORE T. POPA IAȘI**

**Societatea Specialiștilor în Reabilitare Medicală și
Medicină Fizică din Republica Moldova (SSRMMFRM)**



UMF
UNIVERSITATEA DE
MEDICINĂ ȘI FARMACIE
VILU HATIGERANU
CLUJ-NAPOCA



The Romanian Society for Neurorehabilitation
(acronym: RoSNeRe)

<http://srmfrb.ro>



**Congresul Național de Medicină Fizică, Recuperare și Balneologie din România /
Romanian Congress of Physical Medicine and Rehabilitation & Balneology**



BALNEO
RESEARCH

BALNEO RESEARCH JOURNAL
English Edition

<http://bioclima.ro>

Asociația Română de Balneologie (ARB)

02-05 September 2020

**BALNEO
RESEARCH**

BALNEO RESEARCH JOURNAL
English Edition

eISSN 2069-7619

pISSN 2069-7597

ROMANIAN ASSOCIATION OF BALNEOLOGY

Website <http://bioclima.ro/Journal.htm>

E-mail: office@bioclima.ro

ISSN: 2069-7597 / eISSN: 2069-7619

Balneo Research Journal is part of the international data bases (BDI) as follow: [EBSCOhost](#), [CrossRef](#), [DOAJ](#), [Electronic Journals Library \(GIGA\)](#), [USA National Library of Medicine - NLM](#), [Emerging Sources Citation Index](#) (Thomson Reuters)

Publisher: Romanian Association of Balneology (Bucharest)

Asociația Română de Balneologie / Romanian Association of Balneology

Editura Balneara




Balneo Research Journal

BALNEO
RESEARCH

BALNEO RESEARCH JOURNAL
English Edition

eISSN 2069-7619 pISSN 2069-7597

ROMANIAN ASSOCIATION OF BALNEOLOGY

- **International title:** Balneo Research Journal / **Index name:** BALNEO
- **Publisher:** Romanian Association of Balneology / Asociația Română de Balneologie
 - Alea Dobrina, No.7, Bl. D10, Ap.4, District 2, Bucharest, Romania / Mobil 004/0723.138.339 /
 - Email : office@bioclima.ro
- **Aims and scope:** Balneo Research Journal provides a platform to disseminate scientific knowledge to researchers, physicians and other authors interested in publishing scientific articles in the field of Physical and Rehabilitation Medicine and Balneology, in a multidisciplinary scientific journal with peer-review group, open-access, which presents many aspects of daily spa research, medicine, medical tourism and natural therapeutic factors. All the articles are published also online. The journal aims to be a source of complete and modern scientific information for spa sector. Emphasis will be placed on the rapid and transparent publication of scientific articles of interest for balneology, which will be stored in international databases.
- **ISSN:** 2069-7597 / **eISSN:** 2069-7619
- **Frequency:** 4 issues per year, plus addenda
- **The language of publication:** English
- **License:** 

Website <http://bioclima.ro/Journal.htm>



Online submission link:

Offline submission by email: articleonbrj@bioclima.ro

Balneo Research Journal was recognized by the Romanian College of Physicians for 10 CME credits, based on yearly subscription - [Recognition Letter for 2019](#)
[Balneo Research Journal on Scholar Google](#)

- **Journal Field:** Medicine - Therapeutics. Pharmacology
- **Journal Discipline:** Rehabilitation, Physical Medicine and Balneology
- **Article Publication Charges:** 100 Euro per admitted for publication article,
- **Payment tools for publication charges:**
PayPal: Bank transfer: IBAN RO92RNCB0067118770120001, Bank: BCR -

Sucursala Dr. Felix, C.I.F. 27579487,

- Editorial Team can invite between 3 and 5 authors per issue for publishing in Balneo Research Journal free of charge.

For submitting articles for Balneo Research Journal, authors must use the following template: [Balneo Template](#)

- The Peer Review process is single blind (editors choose the peer reviewers and send them the article and discuss the needed changes)

[Peer review article evaluation form](#) -

- The journal's presence in various indexing services, directories and listings: At the present moment, Balneo Research Journal is part of the international data bases (BDI) as follow:

[EBSCOhost](#)

[CrossRef](#)

[DOAJ](#)

[Electronic Journals Library \(GIGA\)](#)

[National Library of Medicine - NLM](#)

[Emerging Sources Citation Index \(ESCI\)](#) - science.thomsonreuters.com

L1 – Balneology in 2020

Constantin MUNTEANU^{1,2}, Diana Nicoleta MUNTEANU^{1,3}, Gabriela DOGARU^{1,4}

Corresponding author: Constantin MUNTEANU, E-mail: office@bioclima.ro



DOAJ
DIRECTORY OF
OPEN ACCESS
JOURNALS



Balneo Research Journal

DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L1>

OP Vol.11, No.3, September 2020

p: L1

1. Romanian Association of Balneology, Bucharest, Romania

2. Emergency Clinical Hospital „Bagdasar-Arseni”, Bucharest, Romania

3. National Institute of Rehabilitation, Physical Medicine and Balneology, Bucharest, Romania

4. “Iuliu Hațieganu” University of Medicine and Pharmacy Cluj-Napoca, Clinical Rehabilitation Hospital Cluj-Napoca, Romania

Abstract

Introduction. The development of Balneary Tourism could be a real COUNTRY Project, because what can be more complete from a socio-economic point of view than increasing the level of health and using the huge balneary potential on which the existence of therapeutic natural resources and Spa Resorts have given them to our country, as well as the financial potential that can result from this activity.

From our point of view, such a desideratum could be achieved only through a program - the financing axis dedicated to Spas and Balneology, which aims at a Promotion of Romania in this regard, to allow the use of natural therapeutic factors safely during post-pandemic and create the opportunity to increase our tourism potential in this field through modern know-how and in an updated socio-economic context.

The demographic factors of modern society register phenomena such as the aging population and the increasing incidence of diseases related to the generalization of the sedentary urban lifestyle. Spa tourism can be an easy to implement alternative for restoring the health of the individual and to act prophylactically and preventively to maintain an optimal functional balance of biological and psycho-social parameters of the individual.

The use of thermal and mineral springs in the country for health and treatment purposes is a tradition with a history of over two thousand years. The legend of Hercules, bathed in the waters of Cerna is proof of the use of thermal waters long before the conquest of the Romans. This tradition exists in almost all civilizations.

Today it maintains its utility and is spread on all continents, mainly in the Middle East and Southeast Europe, Asia (Middle East, Japan, China, Turkey), South America (Argentina, Mexico, Colombia), and North Africa (Morocco, Tunisia).

Ensuring measures and rules that respond to the fear of one's safety will be a harder element to overcome without an effective promotion and funding program and the judicious use of European funds. Thus, we can create levers that greatly increase the level of addressing spa tourism, both domestically and internationally.

On the other hand, we contribute through editorial publications and the Balneo Research Journal to the promotion of spa tourism in the country and internationally. But, the elaboration and implementation of such a program - the financing axis dedicated to the Spa Resorts would also have the motivation to generate new scientific data that would increase the possibility of promoting the concept of Spa Romania.

We know that, after this pandemic episode, tourism will start, sooner or later, for all countries in the world. After this global re-start, we have a unique chance to reduce the gap in attracting tourists and tourists to spas. However, this must be thoroughly prepared, planned, and properly implemented.

We are convinced that other substantial arguments can be made to put spa tourism back in "pole position", if we give priority to scientific research, without which the foundation will be much weaker. This would be a time for reflection on the key role of scientific research in promoting spa tourism. The huge potential cannot be exploited without scientific research and efficient promotion on a globalized tourism market and with outstanding competitors.

L2 - Efficacy of Balneoclimatology on the Increase in Functionality and Quality of Life in Persons with Parkinson's Disease

Gabriela DOGARU¹, Ioana STANESCU¹, Adriana BULBOACĂ¹, Marieta MOTRICALA²

Corresponding author: Gabriela DOGARU, E-mail: dogarugabrielaumf@gmail.com

1. "Iuliu Hațieganu" University of Medicine and Pharmacy Cluj-Napoca, Clinical Rehabilitation Hospital Cluj-Napoca, Romania
2. S.C. Baile Tusnad, Romania

Abstract

Introduction. Pain, gait and balance disorders in Parkinson's disease represent therapeutic challenges, because they are associated with an increased risk of falls, a decrease in the functional capacity and quality of life of these patients.

Materials and Methods. The study included 25 patients with Parkinson's disease stages I-III Hoehn-Yahr, from Baile Tusnad. The patients received treatment consisting of individual carbonated mineral water baths for 15 minutes twice a week, climatotherapy and aerotherapy for 30 minutes daily, aquatic exercises in a carbonated mineral water pool for 30 minutes daily, laser therapy, special massotherapy and kinesiotherapy, performed daily for 14 days. Each patient was assessed clinically before and after treatment, at 3 and 6 months, by the 10 Meter Walk Test, TINETTI Gait and Balance Scale, Webster Scale, Quality of Life Scale, Visual Analog Scale for Pain, adverse reactions.

Results. At the end of treatment, an increase in the walking distance and speed, a statistically significant improvement of gait was observed, $p < 0.05$. Statistically significant results ($p < 0.05$) were also obtained when assessing pain and balance. For the Webster Scale, which examines the limits of movement and autonomy, a p value < 0.05 was obtained. The Quality of Life Scale showed a statistically significant p value < 0.05 . The results were also statistically significant at 3 months, the patients continuing the exercises at home, and their mobility was better at 6 months as well. There were no side reactions to the treatment applied.

Conclusions. The rehabilitation program including aquatic exercises influenced the clinical picture and functional capacity, determining a significant relief of pain, an improvement of the mobility, balance and quality of life of these patients. The positive effects of hydro-kinesiotherapy can contribute to the improvement of biomechanical gait patterns in patients with Parkinson's disease.

L3 - INFLUENCE OF HOT FOSSIL SAPROPELIC MUD PACKS ON BLOOD PRESSURE VALUES AND HEART RATE

VARODI Mariana¹, DOGARU Gabriela²

Corresponding author: VARODI Mariana, email: nicovarodi_bft@yahoo.com



1. Ocna Sibiului Strand Spa Complex

2. Clinical Rehabilitation Hospital Cluj-Napoca, "Iuliu Hatieganu" University of Medicine and Pharmacy Cluj-Napoca, Romania

Abstract.

Introduction

The main use of Ocna Sibiului resort is for rheumatic diseases, but persons who come for treatment here (at the indication of the family physician, the specialist doctor or most frequently on their initiative) are in their great majority (>50%) aged between 60 and 85 years, and frequently have associated disorders: HTN, CIHD, cardiac rhythm disorders, etc. Due to the effects derived from its physical properties and chemical composition, fossil sapropelic mud in Ocna Sibiului is used in therapy at the treatment facility as partial or general hot mud packs, at temperatures of 38-40 degrees. It is known that heat application induces an increase in heart rate and cardiac output, an increase in the blood circulation speed, a reduction of peripheral vascular resistance, and a decrease in systolic and diastolic blood pressure values.

Objectives

To evaluate the influence of hot fossil sapropelic mud packs in Ocna Sibiului resort on blood pressure values and heart rate.

Material and method

40 patients who received treatment (for at least 10 days), which included hot mud packs. BP values and heart rate were measured before and after the procedure.

Results

The patients were assessed depending on age, sex, presence/absence of HTN, CIHD, cardiac conduction, and rhythm disorders. In the majority of the cases, an increase in heart rate occurred after the application of hot mud packs, while blood pressure values decreased, these findings being in accordance with the literature data.

Conclusions

Using natural therapeutic factors yields good results in the therapy of a wide range of degenerative, inflammatory or abarticular rheumatic diseases, post-traumatic locomotor system disorders, neurological, dermatological diseases, metabolic diseases, etc., but treatment should be adequately dosed and indicated taking into account the associated disorders of patients. If heat application is prolonged, BP values normalize or even increase by 10-20 mmHg. In elderly patients, high-intensity thermal stimuli may induce paradoxical vasoconstriction reactions. The sudden application of a temperature >40 degrees causes profound vasoconstriction, with mobilization of blood from reservoirs and an increase in systolic blood pressure.

L4 - Potassium and mineral waters, therapeutic effects in cardiometabolic diseases

GÁSPÁR Boróka-Panna¹, DOGARU Gabriela²

Corresponding author: GÁSPÁR Boróka-Panna, E-mail: g.boro@hotmail.com



Balneo Research Journal

DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L4> OP

Vol.11, No.3, September 2020

p: L4

1. "Prof. Dr. Ioan Pușcaș" City Hospital, Șimleu Silvaniei, Romania

2. "Iuliu Hațieganu" University of Medicine and Pharmacy Cluj-Napoca, Romania

Abstract.

Introduction. Deficiency of mineral elements plays a role in the development of diabetes mellitus, modulates glucose levels and blood pressure. Potassium has been identified as a shortfall nutrient, low potassium levels being associated with type 2 diabetes. Mineral waters with their proper bioavailability could be considered an elective source to influence electrolytic homeostasis; crenotherapy may contribute to daily intake of mineral elements.

Material and method. Studies and reviews describe and summarize the physiological mechanisms and characteristics of mineral nutrients, daily requirements, presenting and highlighting the preventive and therapeutic role of mineral waters in cardiometabolic diseases, as part of a balneological approach.

Results and discussions.

Type 2 diabetes mellitus is a worldwide epidemic, a cardiovascular risk factor, which may develop in any case, especially in the presence of a pre-diabetic status (impaired beta-cell function and increased insulin resistance) and in the presence of genetic (more than 40 susceptibility genes) or epigenetic (obesity, sedentary lifestyle, hypertension) factors. Glucose control might be affected by dyselectrolytemia, given that low potassium levels are associated with type 2 diabetes risk, leading to insulin resistance. Considering a therapeutic approach, reviews report that reduced sodium administration (diminish arterial stiffness) and increased potassium intake (improved endothelial function and NO release, vasodilatation, increased natriuresis, ameliorate sympathetic nervous system effects) can lower blood pressure. A number of studies support the role of potassium in glucose control. A potassium-rich diet or potassium supplementation is part of a preventive treatment method in diabetes and hypertension. Mineral waters in considerable amounts could contribute to meeting nutritional needs. Microelements from water are characterized by more preferable bioavailability and better absorption compared to food. Bicarbonate-, sodium-, chloride- and sulphate-rich mineral water, as well as calcium, magnesium, fluoride and potassium content has been documented in the medical literature on glucose control, by evaluating glucose homeostasis-related parameters. Balneoclimatic resort recommendations in cardiometabolic diseases are: Covasna, Băile Tușnad, Borsec, Călimănești-Căciulata, Olănești, Slănic Moldova, Vatra Dornei.

Conclusions.

Adequate potassium intake influences glucose and blood pressure control; mineral waters could be an elective source for health maintenance and prevention of cardiometabolic disease.

Key words: mineral water, potassium, diabetes, blood pressure

1. Khan RMN, Chua ZJY et al. - *From Pre-diabetes to diabetes: Diagnosis, treatments and translational research*, Medicina 2019 Aug; 55 (9), pii: E546
2. Costa-Vieira D, Monteiro R, Martins MJ - *Metabolic syndrome features: Is there a modulation role by mineral water consumption? A review*. Nutrients 2019 May 22;11 (5), pii E1141
3. Toxqui L, Vaquero M P - *An intervention with mineral water decreases cardiometabolic risk biomarkers. A crossover, randomized, controlled trial with two mineral waters in moderately hypercholesterolaemic adults*, Nutrients 2016 Jul; 8(7):400
4. Stone MS, Martyn L, Weaver CM - *Potassium intake, bioavailability, hypertension, and glucose control*, Nutrients 2016 Jul; 8(7): 444
5. Iqbal S, Klammer N Ekmekcioglu C - *The effects of electrolytes on blood pressure: A brief summary of metaanalyses*, Nutrients 2019 Jun 11(6): 1362

L5 - THE PRACTICAL APPROACH TO COMORBIDITIES IN RESPIRATORY REHABILITATION

Doina-Clementina Cojocaru, Paraschiva Postolache

Presenting author **D.C.Cojocaru**, E-mail: clementina.cojocaru@gmail.com

“Grigore T. Popa” University of Medicine and Pharmacy Iași, Romania, Faculty of Medicine
Department of Medical Specialties (I), Clinical Rehabilitation Hospital Iași, Romania
Pulmonary Rehabilitation Clinic

Abstract.

Introduction: Pulmonary rehabilitation is an effective intervention in chronic respiratory diseases, as many trials have documented. Comorbidities, defined as conditions associated with the primary disease, can alter the clinical course, therapy response, and prognosis of respiratory patients. The aim of the presentation is to assess the impact of major comorbidities on the pulmonary rehabilitation program, a major component of the therapeutic plan.

Materials and methods: Identification of the common comorbidities added to primary respiratory diseases and practical approach of a patient with complex pathology before and during a pulmonary rehabilitation program, according to the current data from literature and the experience of Iași Pulmonary Rehabilitation Clinic.

Results: The most common comorbidities identified in patients with chronic respiratory diseases, prior to the beginning of the rehabilitation program are cardiovascular diseases, diabetes, and metabolic syndrome, as well as musculoskeletal pathology. Pulmonary patients associating cardiovascular diseases tend to have more intense dyspnea, inappropriate tachycardia, and blood pressure values during physical effort, in terms of excessive increase or a sudden drop in systolic blood pressure. As well, these patients frequently experiment angina pain during training, requiring close monitoring (rest ECG, Holter monitoring) and a specific medication (beta-blockers, nitrates, ivabradine). In the presence of malignant arrhythmias or pulmonary hypertension, the risk of syncope during effort has to be properly managed. Diabetics require tighter glycemic control during the program through adjustment of insulin and oral medication, considering the improvement in the insulin resistance of physical exercise and the hypoglycemic effect. Patients with severe musculoskeletal pathology and claudication are mechanically limited in physical performance and medication for osteoporosis (bisphosphonates) favors gastroesophageal reflux, at night during drainage postures, leading to worsening cough and dyspnea.

Conclusions: Comorbidities in chronic respiratory diseases have a considerable impact on the safety and efficacy of pulmonary rehabilitation programs, demanding a comprehensive interdisciplinary approach.

L6 - Modelul holistic de recuperare si îngrijirea pacienților cu afecțiuni ortopedice si neurologice in bazele de tratament Călimănești-Căciulata-Cozia

Dr. Eugenia Dumitrescu, Medic primar recuperare, MF si balneo-climatologie

Dr. Carmen Enescu, Medic șef baza de tratament Calimanesti-Caciulata Cozia

Corresponding author: Eugenia Dumitrescu, E-mail: jenyduimtrescu2003@yahoo.com



Abstract.

Introducere. Se pune mereu întrebarea : ultra specializare sau medicina holistica? La ora actuala ne confruntam cu o nevoie sporita de servicii de recuperare de calitate. Cauza: numărul mare de accidente rutiere si AVC la vârste tot mai tinere. Balneoclimatologia la Calimanesti-Caciulata a străbătut o perioada foarte dinamica de modernizare, accelerate in ultima decada. Au fost proiecte majore de dotare cu aparatura piscine si echipamente moderne din diverse surse de finanțare. Creșterea calității îngrijirilor medicale depinde de echipa de recuperare. Modelul occidental de recuperare trebuie sa fie obligatoriu si in stațiune.

Material si metoda. Testele clinic au fost făcute pe un număr de 590 pacienți care au urmat tratament in bazele de recuperare Călimănești-Cozia in perioada februarie 2019 – dec 2019. Media de vârstă 55 ani cu limite de vârste 27-80 ani. Distribuția geografica a pacienților: din întreg teritoriul României cu predominanta Argeș, Dolj, Ilfov, Olt, Teleorman. 402 pacienți din mediu urban, 188 pacienți din mediu rural.

Patologie:

- Sechele, accidente de circulație cu leziune de coloană si cerebrale 91 pacienți
- Sechele AVC 112 pacienți
- Osteosinteza post fracturi 387 pacienți

Toți pacienți au avut MRI. Am abordat holistic pacienții pentru ca multe cazuri a fost vorba nu numai despre leziuni fizice ci si despre reale trauma psihice. In tratament ne-am bazat pe deviza lui Sebastian Kneip considerat părintele balneologiei: "Inactivitatea slăbește, exercițiul întărește, excesul produce daune."

Abordarea pacienților a fost multidisciplinara, pentru ca atât ortopedul cat si neurologul au venit cu o contribuție. Am introdus terapia durerii(farmacologic sau non farmacologic) pentru ca la o durere de gradul 3-4 pe scara numerica de evaluare de la 0-10 nu se poate face recuperare.

Terapia fizica antialgica a constat in: Împachetări calde si stimulare electrica nervoasa trans cutanată-TENS. Componenta centrala in structurarea programului de recuperare a fost exercițiul fizic la sala in piscine sau la cada. După o evaluare clinica si funcțională atenta si o stratificare a riscului antrenamentul fizic a fost individualizat pentru fiecare pacient. In practica medicala zilnica am folosit si chestionarele legate de calitatea vieții. Reinsertia sociala a pacienților a fost scopul final al recuperării; Pentru alți pacienți obiectivul final a fost ameliorarea calității vieții.

Rezultate

- 295 pacienți au plecat fără durere si cu posibilitatea de auto îngrijire
- 225 pacienți au dorit sa mai urmeze încă 10 zile de recuperare pentru perfecționarea abilităților de mișcare
- 70 pacienți necomplianți; factorii stresori psihosociali au contribuit la creșterea comportamentelor de risc de tip fumat, abuz de alcool, obezitate, inactivitate fizica, nerespectare a tratamentului.

Prezenta depresiei a triplet riscul de non complianță. Lipsa psihologului in echipa de recuperare s-a observat; eșecul de a detecta stresul provocat de accident rutier sau AVC a fost o bariera in calea tratamentului adecvat.

Calitatea vieții a fost dificil de măsurat, scorurile de calitate a vieții nefiind unitare, totuși potrivit chestionarelor foarte mulți pacienți si-au dorit un job adaptat particularităților lor.

Concluzii

1. Tratamentul de recuperare in stațiunea Calimanesti-Caciulata rămâne o provocare; se fac trimiteri in stațiune inutile si se blochează oameni care chiar au nevoie
2. Recuperea in stațiune ar trebui sa dureze minim 21 de zile, deoarece reinsertia sociala a pacienților este scopul final
3. Calitățile cheie pentru a avea succes in recuperare sunt: compasiune, răbdarea si perseveranța deoarece recuperarea este una dintre cele mai imprezibile specialități medicale
4. Speram ca in 2020 balneologia sa aibă locul ei bine meritat, acela de profilaxie si recuperare, cu o echipa complete iar noi medicii sa primim mai mult ajutor din partea sistemului.

L7 - Current overview and reappraisal on essays towards systematizing clinical assessment instruments used to evaluate neuro-functional deficits after stroke including through the ICF(-DH) conceptual framework

Gelu ONOSE^{1,2}, Vlad CIOBANU³, Carmen FIRAN⁴, Aurelia ROMILA^{5,6},
Maria Veronica MORCOV⁷

Corresponding author: Prof. Dr. Gelu Onose, E-mail geluonose@gmail.com

Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L7> OP Vol.11, No.3, September 2020 p: L7

1 University of Medicine and Pharmacy "Carol Davila", Bucharest, Romania

2 Teaching Emergency Hospital "Bagdasar-Arseni", Bucharest, Romania

3 Politehnica University of Bucharest, Computer Science Department

4 Teaching Emergency Hospital of the Ilfov County

5 "Dunarea de Jos" University of Galati, Romania

6 Teaching County Emergency Hospital "Sf. Apostol Andrei", Galati, Romania

7 The National Teaching Centre for Neuro-psycho-motor Rehabilitation in Children "Dr. N. Robanescu", Bucharest, Romania

Abstract

Introduction. We herein continue our series of works dedicated to current reappraisals on clinical assessment instruments designated to evaluate functional deficits in the main neurologic/ neurosurgical conditions. The actual one refers to the most frequently used such instruments in stroke.

Like we have previously asserted the "... WHO (World Health Organization – o. n.)'s modern kind of endeavor matches with another contemporary advanced concept: of 'Evidence-based Medicine', an already renown proceeding for correct and complete/minute diagnosis and prognosis, and respectively, for consequent, specific therapeutic-rehabilitative, social, occupational – if applicable – decision-making, and consequent appropriate interventions.

Material and method. As in our previous works of this kind, we review the related essays towards systematization through the WHO's new paradigm to approach human functioning: International Classification of Functioning, Disability and Health (ICF-DH) – as it is progressing towards implementation – based on an updated preliminary literature review.

Results. This approach encompasses:

- a related literature review
- some synthetic considerations regarding the actual clinical-epidemiological status of stroke
- brief emphasizes on basic characteristics of the WHO's ICF(-DH)
- an overview on the clinical assessment instruments used in stroke and their proposed framing within the ICF(-DH).

Conclusions. General remarks and perspectives in the domain are made, acknowledging the necessity to continuously keeping updated, making reappraisals and selecting to use in practice the most appropriate related evaluation tools – considering both: their international recognition and acceptance and respectively, the specific effective possibilities for their impelmentation.

Key words: stroke, literature review, International Classification of Functioning, Disability and Health (ICF-DH), assessment instruments/ measurement scales

Selected references:

1. International Classification of Functioning Disability and Health (ICF). World Health Organization (WHO) – Geneva, 2001; https://www.cdc.gov/nchs/data/icd/icfoverview_finalforwho10sept.pdf
2. World Health Organization. (2007). International classification of functioning, disability and health: children and youth version: ICF-CY. World Health Organization. <https://apps.who.int/iris/handle/10665/43737>
3. MacDonald B K, Cockerell O C, Sander J W, Shorvon S D. The incidence and lifetime prevalence of neurological disorders in a prospective community-based study in the UK. Brain 2000;123 (4): 665-76

L8 - Multifactorial Gait Analysis of the independent walking onset of children with unilateral cerebral palsy

Anca Irina GRIGORIU¹, Liliana PADURE^{1,2}

Corresponding author: Anca Irina GRIGORIU, E-mail: an_ir_ra@yahoo.fr



Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L8> OP Vol.11, No.3, September 2020 p: L8

1. National Center of Rehabilitation for Children „Dr. N. Robanescu”, Bucharest, Romania
2. University of Medicine and Pharmacy „Carol Davila”, Bucharest, Romania

Abstract

Introduction. Multifactorial Gait Analysis is an important instrumented tool of gait assessment. Knowledge on the development of the independent gait development for infants with cerebral palsy is limited. This study aimed to compare the gait biomechanical parameters during the first six months of independent walking of toddlers with unilateral cerebral palsy (UCP) with those of typically developed (TD) infants matched for walking experience.

Materials and methods. Fifteen TD toddlers and twelve UCP children, with a maximum walking experience of six months, were recorded using a 3D optoelectronic system and a dynamic surface EMG system. Data on spatiotemporal parameters, kinematics and EMG activation during walking were collected. Statistical parameter mapping was used for kinematic and EMG comparison. Mann–Whitney U test was used to compare spatiotemporal parameters between groups.

Results. Toddlers with UCP had bilateral modifications of the spatiotemporal parameters during gait as compared with TD toddlers and temporal asymmetry. The largest kinematic difference between the UCP and TD groups was external pelvic rotation on the affected side (13.3°). The groups did not differ in muscle activation for the set of muscles recorded.

Conclusions. Gait analysis should be a standard assessment of children with cerebral palsy, no matter their age. In very young infants, this assessment remains challenging and difficult. The dominant biomechanical modification in infants with UCP during the first six months of independent walking is proximal. At this age, the excessive pelvic retraction of the affected side is likely to be due to abnormal initial motor control disorders more than compensatory mechanisms. The findings of this study provide evidence for early motor interventions focusing on the proximal level in order to optimize gait development at the earliest stages of children with UCP.

L9 - Balance rehabilitation in neurological patients

Ana Maria Bumbea

anamariabumbea@yahoo.com

Abstract.

Introduction: The neurological patient presents a series of physical deficiencies, and a correct balance is a pillar of resistance.

Material and method: Balance recovery starts with a correct assessment of the degree of balance dysfunction. Initially, it is used a large support surface, and then the reduction of the support surface. The mode of application differs depending on the type of neurological impairment. Different techniques are used to affect the degree of balance.

Results: The techniques applied as soon as the onset of the neurological disorder led to a better improvement of the balance deficit in the neurological patient.

Conclusions: It was found that the recovery time was reduced as the rehabilitation techniques were applied early. The correct recovery of the balance will allow the recovery of the gait and the acquisition of other gestures in carrying out the daily activities

L10 - The Benefits of Shockwave Therapy in Calcific Tendinitis of The Shoulder



Otilia ROGOVEANU^{1,2}, Andra CRUCERU², Cioroianu GEORGE², Alesandra FLORESCU³,
Cristina GOFIȚĂ³, Rodica TRĂISTARU¹

Corresponding author: Otilia ROGOVEANU, E-mail: otilia.rogoveanu@gmail.com



1. Department of Physical Medicine and Rehabilitation, University of Medicine and Pharmacy of Craiova, Romania
2. Department of Physical Medicine and Rehabilitation, Emergency Clinical County Hospital of Craiova, Romania
3. Department of Rheumatology, Emergency Clinical County Hospital of Craiova, Romania

Abstract

Introduction. Objectives. Shockwave therapy (SWT) is a noninvasive treatment that involves creating a series of low energy acoustic wave pulsations that are directly applied on a painful joint. Generated shockwaves have proven successful in different pathologies such as calcific tendinitis, plantar fasciitis and bursitis. Calcific tendinitis of the shoulder is one of the most common causes of shoulder pain that occurs when calcific deposits build up inside or around the tendons of the rotator cuff. The purpose of the study was to determine the beneficial effects of SWT on pain compared to other physical methods of therapy.

Materials and methods. In this study we included 40 patients between 40 and 55 years old, 20 women and 20 men. The criteria for inclusion in the study were shoulder pain lasting for more than a month and limited joint mobility. Patients were evaluated clinically, para-clinically and by musculoskeletal ultrasound examination of the painful shoulder. Pain was measured on the visual analogue scale (VAS). Then the patients were divided in two groups, the first one received SWT and the other one received laser, ultrasound therapy and nonsteroidal anti-inflammatory drugs.

Results. Musculoskeletal ultrasound examination of the shoulders revealed increased thickness and hypoechogenicity of the subscapular and supraspinatus tendons in 95% of cases, calcific deposits in 80% of patients and partial tendon ruptures in 30% of cases. Mean VAS was decreased by 58.88% in the first group of patients, while the second group reported a decrease of only 30.12% in mean VAS. The calcific deposits measured using ultrasound were smaller in length in the first group after SWT. Both groups showed an improvement of shoulder mobility in 78% of patients in the first group and 55% of cases in the second group.

Conclusions. Shockwave therapy significantly reduced the pain that accompanies tendinitis of the shoulder and improves functionality and quality of life. It might be first choice because of its effectiveness and safety. The use of SWT in calcific tendinitis of the shoulder proved superior compared to conventional physical procedures.

L11 - The Importance of Physical Therapy in Ankylosing Spondylitis

Otilia ROGOVEANU, Andra CRUCERU, Cioroianu GEORGE, Alesandra FLORESCU,
Anca MUȘETESCU, Ana Maria BUMBEA, Dan CAIMAC

Corresponding author: Otilia ROGOVEANU, E-mail: otilia.rogoveanu@gmail.com

1. Department of Physical Medicine and Rehabilitation, University of Medicine and Pharmacy of Craiova, Romania
2. Department of Physical Medicine and Rehabilitation, Emergency Clinical County Hospital of Craiova, Romania
3. Department of Rheumatology, Emergency Clinical County Hospital of Craiova, Romania
4. Department of Rheumatology, University of Medicine and Pharmacy of Craiova, Romania

Abstract

Introduction. Objectives. Ankylosing spondylitis (AS) is a pathology of high complexity, in which there is required both an extensive clinical and biological evaluation as well as a comprehensive imaging evaluation. In order to improve the quality of life and also the patients' range of movement, there is required a multidisciplinary approach and the application of both pharmacological and non-pharmacological treatment. The purpose of the current study is to assess the disease activity of patients diagnosed with AS before and after non-pharmacological treatment.

Materials and methods. Our study included a number of 27 patients, 22 males and 5 females, with minimum age of 17 years, maximum age of 60 years, mean age of 41.55 years and mean disease duration of 7.7 years. All patients were recommended rehabilitation therapy, especially those with a predominantly axial form of AS. The therapeutic protocol was performed either individually by the patient or in classes guided by a physical therapist, 3 times per week for 1 hour over a period of 3 months.

Results. The patients had either the axial form of AS (19%), peripheral form of AS (27%) or the combined involvement of the axial and peripheral form (54%). Disease activity calculated using Ankylosing Spondylitis Disease Activity Score (ASDAS)-CRP was within moderate range in 12% of patients, high range in 9% of cases and very high range in 79% of the patients. BASDAI mean values were 7.51. The mean registered value of BASFI was 7.79. The patients were reevaluated after 3 months of treatment with NSAIDs, DMARDs and physical therapy. Disease activity scores and functional indices were reassessed, with a mean value of ASDAS of 3.69 in contrast with 4.77 before treatment. BASDAI mean values were 7.03, as well as BASFI recalculated values had a mean of 6.91. BASFI individual and mean values decreased significantly after the 3 months of combined treatment, from a mean value of 7.79 to 6.91, minimum and maximum values also decreasing from 1.7 to 1.6 and from 9.6 to 8.4, respectively.

Conclusions. The beneficial effects of both pharmacological and non-pharmacological therapies, have been demonstrated in long and short-term studies by a visible improvement in the patients' quality of life, thus underlining the importance of a multidisciplinary approach to patients with AS.

L12 - PSORIASIS AND CHRONIC DEFORMING AND EROSIIVE TOPHACEOUS GOUT - ASSOCIATION OF COMPLEMENTARY RISK FACTORS FOR CEREBRAL INFARCTION. CASE PRESENTATION, PHYSIOPATHOLOGICAL CONSIDERATIONS

Aurelian Anghelescu^{1,2}, Sabina Solcan¹, Constantin Elena¹, Pandrea Alexandru¹, Prof. Dr. Gelu Onose^{1,2}

1,2

¹Spitalul Clinic de Urgență "Bagdasar-Arseni" (SCUBA), București, România;

²Universitatea de Medicină și Farmacie "Carol Davila" (UMFCD), București, România

Abstract.

Introduction: Oxidative stress is one of the main mechanisms involved in the pathophysiology of inflammatory and neurodegenerative diseases of the CNS. The association between psoriasis and cardiovascular disease is an etiopathogenic dilemma, many studies have shown an increased risk of cardiovascular morbidity in patients with psoriasis, compared to the general population. The prevalence of gout is 6% men and 2% women. Gout is a risk factor for multiple pathologies including cardiovascular disease, being the equivalent of diabetes on vascular pathology. The association of gout with myocardial infarction or stroke is not very clear, the relationship between uric acid and prognostic of stroke remains debatable. Uric acid is the end product of purine catabolism, and the main endogenous blood antioxidant; it potentiates the neuroprotective effects of rt-PA (tissue plasminogen activator). Despite the above, an increased level of uric acid can be considered as an independent risk factor for stroke. Too high or too low uric acid concentrations are associated with a negative prognosis of stroke. Although uric acid is an endogenous primary antioxidant with neuroprotective potential, patients with cerebral ischemia and excessively high levels of uric acid ($> 380 \mu\text{mol} / \text{L}$), or too low uric acid ($\leq 250 \mu\text{mol} / \text{L}$), are at risk of 2-3 times higher for poor prognosis of stroke, compared with patients with normal uric acid levels ($250-380 \mu\text{mol} / \text{L}$).

Case presentation. A 47-year-old male patient was admitted in subacute stage of capsulo-thalamic ischemic stroke (October 31, 2019). Neurological examination revealed predominantly left hemiplegia, locomotor deficiency, hemihypoesthesia, left-sided homonymous hemianopsia. The medical history: capsulo-thalamic ischemic stroke, HTA-E st III (neglected, diagnosed in December 2018), chronic tophaceous gout (diagnosis in 1998, treated with Colchicine and Milurit), psoriatic arthropathy (2016), cholecystectomy (2001), chronic smoking, for over 30 years. The patient has deformed gouty tufts at the level of the right achilles tendon (with local suppuration), left achillian tendon, hallux bilaterally, the right elbow joint, right hand. It was evaluated clinically and functionally, according to the standardized protocols implemented in our clinic (ADL, IADL, Barthel, MMSE, FIM, QOL, Asworth Penn, FAC, Stratify risk scale, GOS-E, modified Rankin, MOCA) and paraclinic by laboratory analysis, joints radiographs (hands, elbows ankle joints), cerebral CT. The patient received a complex neuromuscular recovery program (synergistic association of neurotrophic factors, metabolic modulating medication, kinetotherapy). No corticosteroid medication was needed in topical application on the psoriatic lesions. The evolution was favorable with neurological improvement, reflected by the neurological evolution and quantified by the upward curve of the clinical scores. Improvement of the short distance walking, static and dynamic balance were obtained; at discharge he performed independent walking on short distances with a tetrapod stick.

Secondary prophylaxis addressed the control of the risk factors that could be influenced: the metabolic dysfunction (diet and medication), optimization of blood pressure, smoking (health education and patient's will); psoriasis is the only less influential etiopathogenic risk factor.

Conclusions: The current standard of management of patients with stroke and multiple comorbidities (gout, psoriasis, HTA, chronic tobacco) is represented by the multidisciplinary approach, for secondary and tertiary prophylaxis, in order to improve their quality of life.

Keywords: *Stroke, gout, psoriasis, smoking, neuroprotection, oxidative stress,*

L13 - Protocol for physiotherapeutic treatment in the recovery of scapulohumeral periarthritis

Catalin Ionite¹, Iustina Condurache¹, Mariana Rotariu^{1*}

Corresponding author **Mariana Rotariu**, E-mail address: rotariu29@yahoo.com

¹University of Medicine and Pharmacy „Grigore T. Popa”, Street University, no 16, Iași, România

Abstract.

Introduction

Scapulohumeral periarthritis is a clinical syndrome that affects both performance / leisure athletes and ordinary people, by affecting the periarticular structures. This syndrome results in decreased muscle strength, joint mobility and increased pain at the scapula-humeral joint.

Material method

The present study was performed on a group of 30 subjects diagnosed by the specialist doctor with scapulohumeral periarthritis. The group was evaluated initially, but also final. The pain felt by the patient in the joint was evaluated using the Visual Analog Pain Scale. The measurements were made in the frontal plane on the useful sectors of mobility (0°-45°, 45° -90° and 90° -150°). The results of the measurements were correlated with the muscular force corresponding to the movement sector.

Between the two assessments, the group of subjects benefited from a physiotherapeutic plan consisting of physiotherapy combined with proprioceptive (relaxation-opposition) neuromuscular facilitation techniques daily, for a period of 10 days. All data obtained from the two tests were taken, inventoried and compared.

Results

Analyzing results obtained after the evaluations, it was found after the treatment period a significant decrease of the pain in all the three mobility intervals (0°-45°, 45° -90° and 90° -150°) concomitant with an increase of the muscular strength, implicitly of the amplitude of motion.

Conclusions

Due to the positive results obtained, the treatment protocol developed and applied in the present work has led to the improvement of the symptoms generated by the scapulohumeral periarthritis syndrome.

Keywords: *scapulohumeral periarthritis, physiotherapeutic treatment, evaluation*

L14 - IMPROVING FUNCTIONAL AND MOTOR CAPACITY THROUGH MEANS/RESOURCES AND METHODS SPECIFIC TO ACVATIC ACTIVITIES

Mariana Rotariu^{1*}, Marius Turnea¹, Dragos Arotaritei¹, Catalin Ionite¹, Iustina Condurache¹

Corresponding author Mariana Rotariu, E-mail address: rotariu29@yahoo.com

¹University of Medicine and Pharmacy „Grigore T. Popa”, Street University, no 16, Iași, România

Abstract.

Introduction

Exercise programs in the aquatic environment have as their main objective the improvement and maintenance of physical capacity/ capability, these being in continuous development and diversification. Water exercise amplifies the effects of general physical exercise, by allowing a more precise control over the movement of each body segment and of the body as a whole.

The aquatic environment offers a number of beneficial effects compared to ones offered by the terrestrial environment. The benefits obtained through the aquatic activities are fundamental and are reflected throughout the entire body including both motor, functional and aesthetic level.

Material and Methods

The objective of this study is represented by the identification of new forms of physical exercise that will increase the effort's capacity. In order to achieve this goal, several methodological requirements were met, such as: successive engagement of the joints and muscle groups in effort (starting with the neck's muscles, shoulders, arms, torso and legs, simultaneously with scapular-humeral joints, spine and coxo-femoral joints and legs), the gradually usage of exercises, starting with the most basic and then increasing the complexity of the exercises, the usage of the accessible exercises in the beginning of the training, executed with high amplitude and reduced speed, focusing on the correctness of the execution, the selection and the adequate/ appropriately usage of the initial positions according to the subject's particularities and the shape/form of the exercise, the optimal control of the effort, achieved through a number of iterations, optimal execution time and breaks, the sets of general physical exercises will consist of sets of 8-12 exercises/reps, the principle of symmetry in the execution of the exercises has to be respected, the continuity of practicing a set of exercises for 6 to 8 consecutive lessons, the recommended work method is fragmented-imitative, efficiently combining the explication with the demonstration, the number of repetitions and the movement's correction.

Results

Analyzing results obtained after the evaluation, we have noticed significant growth in the functional and motor capacities.

Conclusions

The systematization of water activities on objective criteria effectively contributes to their knowledge, while allowing them to be included in the spectrum of recreational, sporting, relaxing or therapeutic activities.

Keywords: *acvatic activities, physical exercise, evaluations*

L15 - Efficiency of Complex Medical Rehabilitation Programs in Assisting the Patient with Painful Shoulder Syndrome

Victoria CHIHAI¹, Alisa TĂBÎRȚĂ¹, Oleg PASCAL¹, Ana – Maria BODEAN¹

Corresponding author: Victoria CHIHAI, E-mail: victoria.chihai@usmf.md

1. The University of Medicine and Pharmacy "Nicolae Testemitanu", Chisinau, Republic of Moldova, The Department of Medical Rehabilitation, Physical Medicine and Manual Therapy

Abstract

Introduction. Painful shoulder syndrome is a clinical syndrome characterized by pain, redness and functional impotence at the scapula humeral belt. The pathological changes affect both the hard and the soft structures at this level with chronic evolution and severe clinical and functional limitations. Shoulder joint is one of the most mobile joints with degrees of freedom in nerve injuries or compressive disorders can cause severe functional pain and disability with significant limitation of daily activities and quality of life. [1,4] Combining various conventional methods of recovery between them but also with other types of treatment can increase the chances of clinically and functionally recovering of people with painful shoulder syndrome. [3]

Case presentation. Patient B.B. age 50, urban environment, specialized surgeon was admitted to the IMSP "State Hospital" accusing persistent pain in the right shoulder with limiting active movements of about 3 months until addressing. After the complex evaluation, the functional diagnosis was established. Painful mixed shoulder syndrome on the right. Mixed red shoulder straight. At the primary examination, the pain was assessed with 8 points after the Visual Analog Scale (VAS) and 69 points after the McGill questionnaire. Goniometric indices for the right shoulder: ext / fl = 150/00/980; abd / add = 280/00/00. The painful bow tests Empty-can, Apley, Codman were rated positively. The daily functional capacity was evaluated according to the DASH (Disabilities of the Arm, Shoulder and Hand) questionnaire, rated with 30.9 points.

Results. The patient received conventional drug treatment and rehabilitation therapy (kinetotherapy, magnetotherapy) in combination with Ianliao (TE14), Jianyu (LI15), Fengchi (GB20), Queng (LI11), Waiguan (SJ5), Hegu LI4, Tianzong (SI 11) for 8 weeks. At the end of the treatment, the pain decreased to 4 points on the VAS scale and 35 points on the McGill scale. The joint mobility was improved for extension by 50, flexion - by 130, and the abduction reached the value of 400. The total functional capacity tested by the DASH questionnaire was assessed with 19.5 points after treatment.

Conclusions. The associated complex program of medical rehabilitation applied to the patient with the painful shoulder syndrome has contributed firmly to the clinical-functional improvement by diminishing the algal syndrome, improving the segmental functional capacities and the daily activities. The acupuncture selected on the energy points can be indicated in combination with kinetotherapy and electrotherapy for the efficiency of the medical recovery treatment.

Key words: *painful shoulder syndrome, evaluation of the shoulder, acupuncture*

References

1. Beaudreuil J, Nizard R, Thomas T, Peyre M, Liotard JP, Boileau P, et al. Contribution of clinical tests to the diagnosis of rotator cuff disease: a systematic literature review. *Joint Bone Spine*. 2009 Jan;76(1):15-19
2. Tudor Sbenghe - „Kinetologia profilactica, terapeutică și de reabilitare” 2008
3. Wang XY, Zhang YM, Jia YT, Wang H, Yue Q, Wu JK & Chen S. Treatment of 50 Patients with Acute Shoulder Periarthritis by Hui Acupuncture. *Journal of Clinical Acupuncture and Moxibustion*. 2015;31(4).
4. <http://www.doctorortoped.ro/afectiuni-ortopedie/umar-si-brat/33-durere-umar-ortoped-bucuresti.html>

L16 - EVALUATION OF THE ANTINOCICEPTIVE AND ANTI-INFLAMMATORY ACTIVITIES OF HESPERIDIN AND ITS INCLUSION COMPOUNDS IN MICE

Andreia Corciovă, Bianca Ivănescu, Daniela Carmen Ababei, Ana-Flavia Burlec,
Cornelia Micea, Veronica Bild



Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L16> OP Vol.11. No.3, September 2020 p: L16

“Grigore T. Popa” University of Medicine and Pharmacy, Faculty of Pharmacy, Iași, Romania

Abstract.

Introduction

This study aims to evaluate the antinociceptive activity of hesperidin (HES) and its inclusion compounds with beta-cyclodextrin (HES- β CD) and hydroxypropyl-beta-cyclodextrin (HES-HP- β CD) on inflammatory and non-inflammatory nociception models, as well as the anti-inflammatory action.

Materials and Methods

For these experiments, we employed nociception models using thermal stimulus (hot plate and tail immersion tests, $t = 52.5^{\circ}\text{C}$; 30, 60 and 90 minutes testing), chemical stimulus (Zymosan-induced abdominal constriction response test, using distinct lots and testing at 60, 90 and 120 minutes after administration of samples) and pressure stimulus (Randall Sellito test) and an inflammation model for the evaluation of inflammatory edema by Plethysmometer test. Groups of 6-10 Swiss mice / lot were used, receiving by oral administration suspended substances (HES and inclusion compounds) in 0.1% CMC-Na. The doses were administered in geometric progression.

All experiments were conducted in strict conformity with the specific regulations approved by "Grigore T. Popa" University of Medicine and Pharmacy Iași, European bioethical regulations (Directive 2010/63/EU) and International Association for the Study of Pain regulations.

Results

HES showed antinociceptive and anti-inflammatory activities on all studied models for a 50 % activity level. The analysis of the obtained ED_{50} values indicates a higher potency for the non-inflammatory nociception models (using thermal stimulus) for the 90-minute test and a comparable potency between the inflammatory nociception models and the inflammatory edema inhibition test.

The inclusion compounds presented different actions for the same activity level. HES- β CD has a higher potency in thermal stimulation models at 60 minutes, comparable potency observed in inflammatory nociception models and higher potency in the inflammatory edema inhibition test. HES-HP- β CD did not show antinociceptive action on thermal stimulation models. The analysis of the ED_{50} values obtained in inflammatory nociception models and in the inflammatory edema test demonstrates superior and comparable potency.

Conclusions

The HES- β CD inclusion compound exhibited antinociceptive action predominantly on experimental non-inflammatory nociception models, while HES-HP- β CD exhibited anti-inflammatory and antinociceptive activities predominantly in inflammatory nociception models.

L17 - Influences of Mandible Position and Activities on Human Postural Control

Dragos Petrica SARDARU¹, Daniela MATEI¹

Corresponding author: Dragos Petrica Sardaru, E-mail address: serdarud@yahoo.com



Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L17> OP Vol.11, No.3, September 2020 p: L17

1. University of Medicine and Pharmacy “Grigore T. Popa” Iasi, Biomedical Sciences Department.

Abstract

Introduction. In the last twenty years there have been great debates about the postural control of the human body and the multisensory integration of the different sensitivity afferences. One of the sensory inputs analyzed for its supposed influence in the postural control is the temporo-mandibular joint system and its mechanosensitive receptors. Mandible and different occlusion positions have been analyzed by different authors for their influence in body posture and sway. The aim of this investigation was to perform a review of the literature and to critically analyze the relationship between the mandible and postural control.

Materials and Methods. A literature review was carried out with the following key words: temporal mandibular dysfunction (TMD), jaw position, body sway, dental occlusion and postural control, posturography. The following online data bases were interrogated: Elsevier - Science Direct, SpringerLink, ProQuest, and Thomson ISI – Web of Science, Wiley Online Library. Were taken in consideration only the randomized control trials (RCT) published in the scientific research journals with a minimum score of impact factor (IF) of 1.

Results. A number of 70 scientific papers were returned at our search but only 60 were taken in consideration for this review.

Conclusions. Results of the present review suggest that afferent signals from dental occlusion effectively contribute to balance control and postural control. Furthermore the newer studies found significant differences in body postural stability between subjects with myogenous TMD and healthy controls.

L18 - Dementia Risk Factors Approach to Patients with Stroke

Ana-Maria FĂTU¹, Ana Maria PÂSLARU¹, Valerica CREANGĂ-ZĂRNESCU¹, Mădălina VERENCA^{1,2}, Anamaria CIUBARĂ^{1,3}

Corresponding author: Ana-Maria PÂSLARU, E-mail: annapaslaru@gmail.com



1 Department Physical Medicine and Balneology, Emergency Clinical Hospital for Children "Sf. Ioan", Galați, Romania

2 Department Gynecology, Emergency Clinical Hospital "Sf. Apostol Andrei", Galați, Romania

3 Department of Psychiatry, Psychiatry Hospital "Elisabeta Doamna", Galați, Romania

Abstract

Introduction. Stroke and dementia are two of the most important causes of disability, dependency and morbidity in the world. Current evidence suggests that 25-30% of stroke survivors develop immediate or delayed vascular cognitive disorders leading to dementia.

Material and method. The study was retrospective for a period of 1 year and included 100 patients. Their primary diagnosis was stroke and the secondary vascular dementia. In addition, we conducted bibliographic research in international databases for scientific literature regarding prevention in stroke and dementia.

Results and discussions. Although it appears in older people, over 60 years, dementia is not a normal, inevitable, aging process of the brain, with 9% of cases being reported in young people. Dementia results from cumulative burden of several brain pathologies, including vascular disease, even the accumulation of miniscule ischemic lesions that can be an important substrate of cognitive impairment.

There is no curative treatment, but epidemiological research provides a substantial amount of modifiable risk factors. Especially cardiovascular risk: hypertension, dyslipidemia and diabetes, can be addressed to prevent or delay the vascular dementia that occurs after stroke and to increase the efficiency of the recovery. This involves risk control due to lifestyle factors: physical inactivity, obesity, unbalanced diets, tobacco use, harmful use of alcohol and social factors like: psychosocial stress, social isolation, low educational attainment, cognitive inactivity and mid-life depression.

Conclusions. Prevention strategies of vascular dementia should be aimed at reducing the level of exposure of individuals to risk factors and strengthening their ability to change their lifestyle in the direction of health promotion.

Key words: *dementia, stroke, risk factors, cognitive, decline*

L19 - The Role of Chemokines and Autoantibodies in the Pathogenesis of Systemic Sclerosis

Mihaiela CHICU^{1,2}, Carmen ANTON¹

Corresponding author: Mihaiela CHICU, E-mail: mihaielabitere@yahoo.com



DOAJ
DIRECTORY OF
OPEN ACCESS
JOURNALS



Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L19> OP Vol.11. No.3, September 2020 p: L19

1. University of Medicine and Pharmacy U.M.F. "Gr.T. Popa" Iasi, Romania
2. Clinical Emergency County Hospital "Sf. Spiridon" Iasi, Romania

Abstract

Introduction. Scleroderma is a chronic multisystem disease of conjunctive tissue, with unknown etiology characterized by fibrosis and degenerative lesions of the skin and internal organs (lungs, heart, kidneys, digestive tract).

The incidence is 9-19 new cases / 1 million inhabitants.

The disease is predominantly women, with a ratio F:M of 5: 1 and even 14: 1. The age of onset is in the range 30-50 years. The main etiological factors of the disease are environmental factors or silicon powder, polyvinyl chloride, silicone implants, aniline, gadolinium.

Discussions. Various chemokines have been implicated in altering angiogenesis, endothelial dysfunction and the blood vessels.

The main types of chemokines with a role in the pathogenesis of systemic sclerosis are: CCL2, CCL7, CCL13, CXCL8, CXCL1, and CX3CL1.

Systemic sclerosis associates a wide variety of autoantibodies. Only 10% of the patients do not have the autoantibodies.

Anticentromere antibodies, the antiARN III synthase antibodies, the antitopoizomeazis 1 antibodies are considered to be highly specific. AntiU3RNP antibodies, antiU1RNP, anticentromere antibodies are frequently associated with pulmonary hypertension. AntiARN polymerase III antibodies increase the risk of developing lung and breast malignancies in patients with systemic sclerosis.

Conclusions. Pathogenic role of chemokines or autoantibody is not well known yet. The two main theories about the role of antibodies in scleroderma pathogenesis involves on the one hand the enhance of immune response, and on the other hand the direct pathogenic effect.

Key words: *systemic sclerosis, chemokines, autoantibodies*

L20 - The effects of cupping therapy in the treatment of lumbar algal syndrome

Victoria CHIHAI¹, Alisa TĂBÎRȚĂ¹, Svetlana PLEȘCA¹, Maxim LUPU¹

Corresponding author: Victoria Chihai, E-mail: victoria.chihai@usmf.md



1. State University of Medicine and Pharmacy "Nicolae Testemitanu", Chisinau, Republic of Moldova
The Department of Medical Rehabilitation, Physical Medicine and Manual Therapy

Abstract.

Introduction

Lumbar algal syndrome is defined as pain that persists over 12 weeks and is determined by degenerative or traumatic vertebral processes. Chronic back pain is the most costly benign health problem faced by patients in industrialized countries and one of the most common causes of limiting the activity of persons under 45 years of age. [2,4] The treatment of chronic back pain can be structured. in 3 phases depending on the duration of symptoms. From the first stage of the disease, physiotherapy with analgesic effect, miorelaxant, and anti-dementia is recommended, in combination or not with the drug treatment. [3,5] These treatment schemes may also be followed in the following stages of pathology.

Case presentation

Patient B.C. male, 44 years old, originally from the rural area, as a driver was admitted to the IMSP "State Hospital" (Chisinau), with accusations of pronounced lumbar pain, stinging and irradiation in the lower limb straight up to the knee level with acute exacerbation during the meal and prolonged orthostatism. From anamnesic: The patient is a smoker for 20 years, leads a sedentary lifestyle, lumbar pain for 6 years with exacerbations 2-3 times a year. Established diagnosis: Subacute Lombosciatica on the right of vertebrogenic origin, persistent moderate algal syndrome; static and walking disorders; obesity grade I. The value of the algal syndrome tested according to the VAS scale was evaluated by the patient with 9-10 points. Signs of elongation: The Lasegue and Wassermann-Matskevich tests were positively appreciated on the right. Functional testing according to the Oswestry Disability Index Questionnaire [1] was scored by 4 points, finger-soil test = -23cm, Šober test = 10/12 cm. Quality of life was assessed by 56 points after the Short-Form Questionnaire [1].

Results

The patient received drug treatment and conventional rehabilitation therapy (kinetotherapy, electrotherapy) in combination with dry cupping therapy along the path of the lumbar paravertebral musculature. After 6 weeks from the beginning of the treatment the pain was noted with 2-3 points. The value of the Oswestry Disability Index Questionnaire reached 1 point. Lasegue and Wassermann-Matskevich tests - negative bilateral, finger-soil test = -4cm, Šober test = 10/15 cm. The summary value of the quality of life indices increased to 89 points (Short-Form questionnaire)

Conclusions

The complex medical rehabilitation program associated with cupping therapy has greatly improved the functional status and quality of life of the person with lumbar algal syndrome. Cupping therapy can be a part of complex physiofunctional rehabilitation programs.

Key words: lumbar algal syndrome, quality of life, cupping therapy

Rferences

1. Durerea Lombară la adult. <http://crdm.md/images/ups/protocol/pdf.2013>
2. <http://www.cnaa.md/files/theses/2019/55228/florentina cristea thesis.pdf>
3. <https://www.ncbi.nlm.nih.gov/pubmed/29436369>
4. <https://www.ncbi.nlm.nih.gov/pubmed/31949534>
5. <http://89.32.227.76/files/14507-PCN-Durerea%2520lomar%25C4%2583.pdf>

L21 - PATHOPHYSIOLOGY OF ENDOTHELIAL DYSFUNCTION IN SYSTEMIC SCLEROSIS

Mihaiela CHICU

Corresponding author: **Mihaiela CHICU**, E-mail: mihaielabitere@yahoo.com

University of Medicine and Pharmacy U.M.F. "Gr.T. Popa" Iasi, Clinical Emergency County Hospital "Sf. Spiridon" Iasi

Abstract.

Introduction

Endothelial dysfunction and vascular injury are the initial events in the pathogenesis of systemic sclerosis, determining structural changes: initially reversible, in time they become irreversible with the obliteration of small and medium vessels and activation of the coagulation cascade. Reducing of the vascular bed causes focal ischemia (amplified by oxidative stress), simultaneously activating immune response and fibrogenesis. In the early stages of the disease vasculopathy precede fibrosis, suggesting that endothelial cells are the primary target and interact with other immune cells, the coagulation cascade, the smooth muscle cells, with fibroblasts.

Discussions

The small arterioles and microcirculation are diffuse affected, leading to the activation of endothelial cells, increased expression of adhesion molecules, endothelial cell apoptosis, capillaries necrosis, intimal proliferation, intestinal obstruction.

Vascular dysfunction is the consequence of altering the balance between vasoconstrictor substances (endothelin), and vasodilators (NO). Endothelin-1 (ET-1) has two receptors: ET-A and ET-B. ET-A receptors is significantly decreased, while the ET-B receptor is significantly increased in patients with pulmonary fibrosis and systemic sclerosis.

Increased levels of ET-1 have been associated with sclerodermic renal crisis, pulmonary fibrosis, the severity of Raynaud's phenomena, the right ventricular failure.

The involvement of ET-1 in the pathogenesis of scleroderma is supported by the treatment effectiveness of antagonists receptors of ET-1: RAPIDS-1 and RAPIDS-2. The benefit of treatment with ET-1 antagonists have also led to their approval for the treatment of pulmonary arterial hypertension.

NO - released under the action of nitric oxide synthase by macrophages, smooth muscle cells, fibroblasts - known as an inductor of endothelium dependent vasodilatation, has a high level in systemic sclerosis, suggesting that there is an aberrant regulation of NO-dependent relaxation in scleroderma.

Conclusion

Defining vascular biomarkers could serve to predict vascular complications. So far none of the markers (angiostatin, endostatin, trombospondin) have been shown solids phenotype correlations.

Keywords: endothelial dysfunction, ET-1, ET-2.

L22 - Evaluation of the effectiveness of the Rehabilitation program in patients with Lumbar Spinal Stenosis after Laminectomy

Anisoara CIMIL¹

Corresponding author: Anisoara CIMIL, email: cimil.anisoara@gmail.com

1. „Nicolae Testemitanu,, University of Medicine and Pharmacy, Kishinev, Republic of Moldova

Abstract

Introduction. Lumbar spinal stenosis (LSS) represents one of the major causes of disability, musculoskeletal pain and stiffness, outcomes that generate consequences such as activity and participation restrictions with negative impact on quality of life. The application of the Rehabilitation programs contributes significantly to the Management of LSS after the laminectomy intervention, having the objectives of improving the functionality and quality of life of these patients. In order to evaluate the effectiveness of the Rehabilitation programs from the point of view of the key parameters, the success of the treatment was quantified according to the patient centered results.

Materials and Methods. We evaluated the efficacy of rehabilitation program in patients after decompression surgery intervened by laminectomy, which was performed in the orthopedic surgery department of the Emergency Institute from Chisinau. The study included 42 patients diagnosed with LSS and surgery by laminectomy, divided into 2 groups, depending on the early rehabilitation in the postoperative period. The evaluation of the results was performed in the immediate postoperative period and after provided rehabilitation treatment was tested according to the Health Guides System of the rehabilitation activities: Oswestry Disability Index, Roland Morris Disability Scale and Likert scale pre- and post-therapy.

Results. Scales scores correlated with change scores for pain ($r = 0.32$, $P < 0.004$) and RM ($r = 0.56$, $P = 0.009$). 72 % of patients had a successful outcome according to Scales; 55%, according to global outcome; 39%, according to the RM score change, and 44%, according to the pain score change. The group who underwent complexity rehabilitation treatment (postisomeric relaxation, ultrasound, laser, or electrical nerve stimulation at patients) at a late postoperative period had worse scores than the group who started the treatment in precocious period and their performance-based measure ($P < .001$).

Conclusions. Our results confirm that early involvement and according to the complexity of the rehabilitation program should be considered a treatment for lumbar spinal stenosis after laminectomy as well as a prognostic factor. The effectiveness of Rehabilitation Programs in precocious period of LSS was proved through prism key parameters, which demonstrates the achievement of important undetected goals by fixed-item measures and is a valid and sensitive outcome measure for assessing the success of rehabilitation in patients after laminectomy.

Key words: *lumbar spinal stenosis, laminectomy, effectiveness, rehabilitation.*

L23 - MULTIDISCIPLINARY APPROACH TO BREAST CANCER

Pâslaru Ana-Maria¹, Fătu Ana-Maria², Munteanu Iulian³, Verenca Mădălină Codruța², Ciubară Anamaria⁴

Corresponding author: Ana-Maria Fătu, E-mail: anafatu09@gmail.com

¹Department Oncology, Emergency Clinical Hospital for Children "Sf.Ioan", Galați, Romania.

²Department Recovery, Physical Medicine and Balneology, Emergency Clinical Hospital for Children "Sf.Ioan", Galați, Romania.

³Department Gynecology, Emergency Clinical Hospital "Sf. Apostol Andrei", Galați, Romania.

⁴Department of Psychiatry, Psychiatry Hospital "Elisabeta Doamna", Galați, Romania.

Abstract.

Introduction.

Breast cancer is the most common neoplasia found in women both in developed and developing world. Despite the existence of screening programs the incidence of this disease is increasing from year to year. Early diagnosis of the disease offers the chance for a long survival.

Material and method.

Analysis of statistical data shows that in most cases this disease is diagnosed at advanced stages, when important medical interventions are needed. Treatment of breast cancer requires careful examination of major therapeutic options which may include surgery, radiotherapy and systemic therapy. The radical mastectomy is a big surgical intervention, of both physically and mentally point of view. Depending on the stage of the disease and the extent of the surgical intervention some patients may need post-mastectomy lymphatic drainage. Its purpose is to prevent or treat the arm lymphedema. Kinetotherapy, manual therapy and other physiotherapy techniques are recommended before breast reconstruction for tissue elasticity and joint mobility.

Results and discussions.

Medical recovery after the oncology disease diagnosis is part of the treatment. The challenge during the treatment of oncological patients consists of the necessity to address to patients with different infirmity grades.

Conclusions.

The development of a long-term multidisciplinary management plan offers the patients the possibility of maintaining their functionality and an improvement in the symptomatology caused by anti-neoplastic treatment.

Key words: *physical exercise, treatment, breast cancer*

L24 - The Influence of Environmental Factors on People with Musculoskeletal Disorders

Dumitru MIHĂILĂ¹, Sinziana-Calina SILISTEANU², Mihaela (Ciurlică) ȚICULEANU¹

Corresponding author: Sinziana-Calina SILISTEANU, E-mail: sinzi_silisteanu@yahoo.com

1. Geography Departement, USV, Romania

2. Speciatility Ambulatory Division CF Suceava, FEFS-DSDU USV, Romania

Abstract

Introduction. Human health is dependent on the variability of meteorological factors, of meteorological elements (sun radiation, atmospheric pressure, ambient temperature, humidity, wind, etc.) but also on the worsening of the chemical composition of the atmosphere. The sudden changes of the weather conditions, the increase in the intensity of the sun rays over certain levels, the atmospheric pollution, are risk factors that must be acknowledged in order to maintain an optimal state of health among the population of Suceava town.

The general objective of the study is the evaluation of the impact for some of the meteorological factors and elements on the people with diseases of the myo-arthro-kinetic apparatus.

Materials and methods. For a period of 6 months, the health condition, and the reaction of the body of the patients who came to the medical recovery office was monitored, according to the values of certain meteorological elements. The data were obtained after several questionnaires applied to patients at the first examination and after the recovery treatment, and then statistically processed.

Results. The analysis of the data over a period of 6 months shows the increase in the addressability of the people with musculoskeletal symptoms in the periods when large amplitudes of temperature, pressure and relative humidity were manifested. Also, due to the pollution and the worsening of the air composition, the percentage of oxygen in the air has slightly decreased, while increasing the one of carbon dioxide, with an impact on the activity of other devices (respiratory, cardiovascular) with consequences for short, medium and long periods on human health. These affected systems have influenced the evolution of the musculoskeletal diseases.

Conclusions. By exposing patients to the variability of atmospheric factors, the evolution of certain conditions may be accelerated or aggravated, with an impact on the patients' health condition. In this context, not only the musculoskeletal system is affected but also the action of the environmental factors is found in all the organs of the human body, affecting the clinical-functional status of the patient.

Keywords: *musculoskeletal disorders, atmospheric factors, health status*

L25 - Efectele tapingului biomecanic Dynamic Tape® în vederea creșterii controlului stabilității la genunchiul post-traumatic.

Ilie Eva; Luca Mirela; Vasilescu Toma

Abstract.

Taping biomecanic, stabilitate, modificarea mișcării, absorția sarcinii mecanice;

Scopul Studiului:

Demonstrarea efectelor pozitive asupra stabilității controlate în timpul flexiei genunchiului în lanț cinematic închis, folosind tapingul biomecanic Dynamic Tape®.

Abordarea tapingului biomecanic poate îmbunătăți controlul stabilității la nivelul genunchiului post-traumatic prin mecanisme ce asistă mișcarea pe toată amplitudinea sa, prin absorția sarcinii mecanice și prin decelerarea în fază excentrică?

Metode:

În perioada 08/03/2018 – 15/05/2018, 13 pacienți au fost incluși în acest studiu cu patologii la nivelul articulației genunchiului. Studiul fiind unul intervențional, controlat aleatoriu (Randomized Controlled Trials, RCTs), Single Blind, pacienții fiind în timpul programului de recuperare în 3 clinici private din România: București, Craiova, Iași. Din lotul de 13 pacienți, 5 au fost de sex feminin și 8 de sex masculin. Media de vârstă 27.46 ani (min 14 ani – max 44 ani). Distribuția patologiei la nivelul membrelor a fost de 5 pacienți cu membrul inferior stâng traumatizat, iar 8 pacienți cu membrul inferior drept.

Din lotul de studiu, 1 pacient a avut tendinopatie rotuliană, 1 pacient a avut luxație la nivelul patellei, 1 pacient meniscectomie la nivelul meniscului intern, 2 pacienți reconstrucție la nivelul ligamentului încrucișat anterior. Restul de 8 pacienți au avut o patologie mixtă: 4 pacienți ligamentoplastie (ACLR) + meniscectomie (M.I.), 1 pacient ligamentoplastie (ACLR) + ruptura ligamentului medio-patelo-femural (MPFL), 1 pacient ligamentoplastie (ACLR) + meniscectomie (M.I. + M.E), 1 pacient ligamentoplastie (ACLR) + meniscectomie (M.I. + M.E) + condropatie gr 3 operată, 1 pacient ligamentoplastie (ACLR) + meniscectomie (M.I.) + condropatie gr 3 operată.

Pentru a afla eficiența tapingului biomecanic privind stabilitatea controlată la nivelul articulației genunchiului, am folosit ca metodă de evaluare Single Leg Squat Test (SLST) pentru a măsura distanța în timpul flexiei pe membrul operat. Lotul de pacienți a efectuat SLST de 3 ori, împărțit aleator, Seria 1 – NO TAPE (NT), Seria 2 – Control Group (CG), Seria 3 – Dynamic Tape® Group (DTG). Aplicările și măsurătorile s-au efectuat în aceeași zi, ordinea seriilor de lucru fiind „random”.

SLST s-a realizat prin stabilirea unei poziții de start (la nivelul degetelor), pacienții realizând mișcarea de genuflexiune cu membrul inferior post-traumatic, cel neafectat fiind întins spre înainte. Măsurătoarea s-a realizat în centimetri, orice mișcare în care pacientul atinge podeaua cu membrul neafectat sau genunchiul post-traumatic intra în valg dinamic, măsurătoarea nu era luată în considerare.

Rezultate:

În urma colectării datelor, media distanței parcurse în timpul SLST a lotului de studiu a fost de 43,048 cm în timpul testărilor inițiale fără tape (NT), 45,698 cm în cadrul aplicării în poziție alungită a membrului inferior (CG) și 47,771 cm în timpul aplicării biomecanice, în poziție scurtată (DTG).

L26 - Osteoporosis - therapeutic challenge?

Liliana Elena Stanciu¹, Elena Valentina Ionescu^{1,2}, Daniela Profir¹, Elena Roxana Almasan¹, Marius Sorin Chiriac¹

Corresponding author: Liliana Elena Stanciu, E-mail: chiriacsorin2002@yahoo.co.uk

¹Balneal and Rehabilitation Sanatorium Techirghiol, Techirghiol, Romania
²„Ovidius” University of Constanta, Faculty of Medicine, Constanta, Romania

Abstract

Introduction: Osteoporosis is a disease of the entire skeleton, characterized by decrease bone mass and microarchitectural alterations of bone tissue, which result in increased bone fragility and predisposition to bone fractures.

Material and method: Accessing standard medical databases: Medline, Embase, Database, Pubmed and the Cochrane Register of Controlled Studies to review new pharmacological studies and non-pharmacological therapies in osteoporosis. Statistical analysis performed from the data extracted from the observation sheets from June 2019 to December 2020 by Dr. Liliana Stanciu.

Results and discussion: The complex balneo-physical-kinetic treatment is an important link in the treatment of the disabling pathology for the patient, with an important clinical resonance. Modern physiotherapy in this pathology: Vacu Sport, Power Plate.

Conclusion: Osteoporosis is a pathology that decreases the patient's quality of life. There are complementary therapies to pharmacological treatment with immediate and long lasting results.

Keywords: *mud, osteoporosis, balneal, hormones*

L27 - ASSISTIVE SENSORY REHABILITATION DEVICE FOR HAND HYPOESTHESIA

Robert Fuior, Cătălin Ionițe, Daniela Viorelia Matei, Călin Corciovă

Corresponding author: Robert Fuior, E-mail: fuior.robert@gmail.com,

University of Medicine and Pharmacy "Grigore T. Popa", Str. Universitatii 16, Iasi, Romania

Abstract.

Introduction. Paresthesia is a neurological condition in which the affected person perceives normal stimuli in a pathological way, such as tingling or numbness. The complete lack of neural transmission defines anesthesia, which is clinically less frequently observed. Hypoesthesia implies a partial loss of sensitivity to stimuli. This may occur in any area of the body, but more commonly the extremities are affected, ie the hands, legs and fingers of the hands and feet. When associated symptoms such as needles, bruises or burning sensations are present, in absence of stimuli, it is called dysesthesia. Paralysis means loss of muscle function, but if the damage involves motor and sensitive fibers, it associates loss of sensitivity.

Material and method. This paper has been conducted on a total of 10 patients who had lost tactile sensitivity, due to different pathologies. The patients performed a recovery program for 10 days by following a trail with the affected hand on a sensory carpet equipped with a series of pressure sensors that were connected to an Arduino development platform which returns the data from sensors. This sensory carpet records the pressure exerted by the patient, as well as the time required to recognize the material and its roughness. All recorded data has been collected and processed using a software (Fig.1).

Results and discussions. After comparing and processing the data, the results indicated that the initial pressure exerted for material recognition and its roughness decreased considerably as the treatment progressed. Moreover, the time required to recognize the material and its texture had dropped considerably.

Conclusions. Based on the present results, it can be inferred that the use of the sensory carpet helps track tactile improvements in patients with hand hypoesthesia by using a rehabilitation device. The statistical evaluation brought a qualitative contribution to the work by processing the obtained results and increasing the significance of the presented data.

Key words: *statistical processing, sensory carpet, touch tactile, rehabilitation, pressure sensors,*

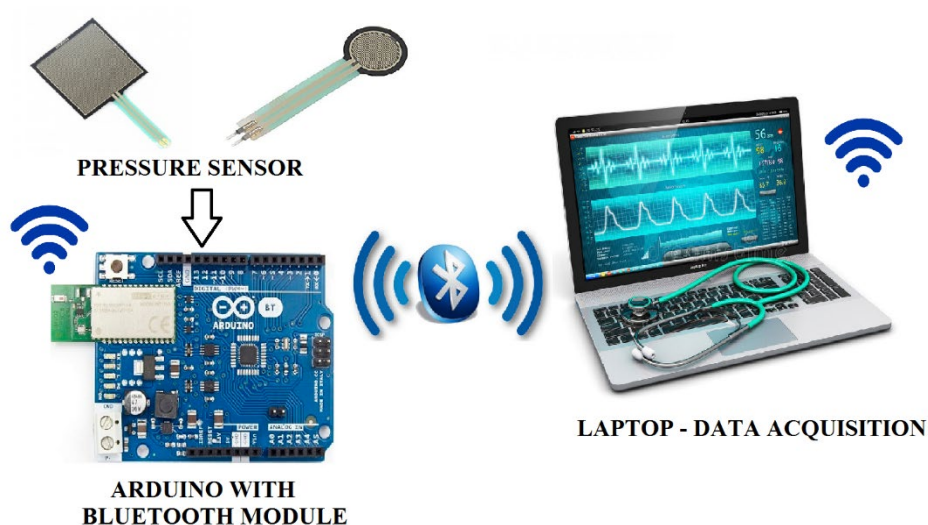


Fig. 1 Device block diagram

L28 - Comparative Evaluation of Balneological Influence of Hydromineral Resources on a Human Body According To the Data of Blood Biochemical Indicators

Elena KORNILOVA¹, Traian-Virgiliu SURDU^{2,3}, Nikolay KORNILOV¹, Olga SURDU³,
Monica SURDU²

Corresponding author: Traian-Virgiliu SURDU, E-mail address: traian@surdu.ro

1. North-Caucasian Social Institute, Stavropol, Russia

2. Ovidius University of Constanta; Romania

3. Balneal and Rehabilitation Sanatorium of Techirghiol, Constanta Country, Romania

Abstract

Introduction. The aim of the work is to develop an algorithm for calculating the functional dependences of changes in the characteristic blood parameters of patients before and after the balneological procedures according to biochemical blood tests. Currently, methods of IT technologies are being actively developed to establish functional dependences of the physiological state of the human body on the composition and properties of blood during diagnosis, development of a course of treatment and rehabilitation recommendations for the subsequent recovery period.

Materials and Methods. The chemical composition of venous blood was studied in a group of patients in the amount of 30 people before and after the balneological procedures using sapropelic therapeutic mud of Lake Techirghiol (Romania). Samples were studied on a CCCXC-6 Nova Biomedical instrument (Austria). The dependences of changes in the composition and properties of the blood of patients were calculated according to the method of mathematical modeling of the composition of Eurasian natural mineral waters, developed by Vasil'tseva O.N., Kornilov N.I. and Kornilova E.N.

Results. The effectiveness of treatment and subsequent monitoring of the physiological state of the patient's body were evaluated by the equation:

$\log \varphi = \log \alpha - \delta \log_{10} (x_i / x_j)$ (1), where: φ is a characteristic indicator of the composition and properties of venous blood; x_i / x_j - the ratio of the studied biochemical blood parameters; $\log \alpha$ and δ are constant values characterizing the measured blood indicator.

The following blood parameters were selected: the content of ions $[Cl]^-$ and $[HCO]_3^-$, mol/dm³, respectively x_i and x_j ; hemoglobin, g/dm³; glucose, g/dm³; oxygen and carbon dioxide, mm Hg; the value of the acid-base state, in units pH.

Calculation of blood parameters according to equation (1) showed that the effect of sapropelic mud on the patient's body is accompanied by a decrease in the blood ions $[HCO]_3^-$ - ions and an increase in the concentration of ions $[Cl]^-$, the pH value shifts to the region of higher alkalinity values. Blood saturation with oxygen after mud therapy procedures increases, which leads to an increase in hemoglobin and a decrease in glucose in the blood of patients.

Conclusions. Thus, we can conclude about the intensification of metabolic processes in the human body after a course of mud therapy. The use of computer diagnostics using characteristic blood parameters φ allows us to quantify the effectiveness of the recommended balneological procedures.

Keywords: *peloidotherapy, blood ions, mathematical modeling, characteristic indicator*

L29 - Study on the Influence of the Anxiety State for the Elderly Diagnosed with Knee Osteoarthritis

Sinziana Calina SILISTEANU¹, Andrei Emanuel SILISTEANU²

Corresponding author: Sinziana SILISTEANU, E-mail address: sinzi_silisteanu@yahoo.com



DOAJ
DIRECTORY OF
OPEN ACCESS
JOURNALS



Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L29> OP Vol.11. No.3. September 2020 p: L29

1. Railway Hospital Iasi - Specialty Ambulatory of Suceava - "Stefan cel Mare" University of Suceava, Romania
2. Cluj School of Public Health - FSPAC - "Babes-Bolyai" University, Romania

Abstract

Introduction. The knee osteoarthritis affects about 250 million people worldwide, and 10-20% of the persons over 60, requiring great costs for the family, society and economy. It is a cause of chronic disability at the joints, and it is more frequent in hips, knees, hands and backbone. The disability and the pain can be reduced by having a healthy life style, a body weight adequate to the age.

Some elderly persons diagnosed with knee osteoarthritis may feel anxious or severely depressed. The anxiety is associated to the increase in the sensitivity to pain. The recovery involves pharmaceutical therapy and kinesio-therapy in order to reduce the algic phenomenon and to improve the physical and psychical function.

The purpose of this study was to prove the relation between the anxiety state and the phenomena determined by the knee osteoarthritis for the elderly.

Materials and Methods. There were 56 patients, over 60 years old, diagnosed with knee osteoarthritis, whose functional and cognitive status was assessed before the recovery program and after that. It was done 3 times a week for 30 minutes, for a period of 20 days, in the ambulatory unit. The patients were assessed for pain (VAS scale and WOMAC subscale), joint stiffness and functional capacity (WOMAC subscale), quality of life (QOL scale) and anxiety state (anxiety test).

Results. At the end of the treatment, it was found that the pain was reduced, the joint stiffness was decreased whereas the functional status was improved. The quality of life was better, the nutritional state improved whereas the anxiety was reduced.

Conclusions. The individual recovery program has an important role in addition to a diet with the purpose of reducing significantly the pain, the joint stiffness and the body weight index. Moreover, it determined the increase in the mobility and stability of the knee joint, and implicitly the anxiety of these patients lessened.

L30 - The impact of saprogenic mud from Techirghiol lake on oxidative stress in ankylosing spondylitis**Daniela Profir¹, Viorica Marin¹, Traian Virgiliu Surdu²**Corresponding author: **Daniela Profir**, E-mail: profir_daniela@yahoo.com¹ Balnear and Rehabilitation Sanatorium from Techirghiol² "Ovidius" University Constanta, Faculty of Medicine**Abstract**

Ankylosing spondylitis (AS) is a complex disease, potentially debilitating, with an insidious onset and radiologic progression of sacroileitis after several years, having as consequences loss of working capacity because of invalidity, damage of health resources and of life quality. Pathogenesis of this condition is not completely elucidated. Yet immune mediated mechanisms involving human leucocyte antigen HLAB-27, cellular inflammatory infiltrations, proinflammatory cytokines, as tumor necrosis factor TNF- α and interleukin-10, as well as genetic and environment factors are playing an important role.

That's why these days we are witnessing a process of approaching to natural therapeutic factors, as helping therapy for many of the diseases for which modern medicine hasn't yet any remedy. Balneotherapy, no matter of the origin and composition of the natural factors used, has a holistic impact upon entire human body.

The study conducted in the sanatorium upon a group of patients with AS between 2012-2013 tried to demonstrate one of the backgrounds of the therapeutic effects of saprogenic mud – improvement of oxidative stress after therapeutical application of mud and salted water from the Techirghiol Lake. In order to elucidate the complex mechanisms of mud action, respecting the criteria of evidence-based medicine, one of the proposed objectives was evaluation of antiinflammatory effect of mud in patients with AS by determining some markers of oxidative stress in dynamics, considering the fact that there is a strong correlation between initiation of inflammatory process and reactive oxygen species. The following markers were measured: total anti-oxidative status (TAS), superoxide dismutase (SOD), glutathione reductase (GR), reduced glutathione (G-SH).

The results have shown once again the invaluable therapeutic potential of sapropelic mud from Techirghiol, as helpful therapy in chronic inflammatory rheumatism.

Key words: ankylosing spondylitis, proinflammatory cytokines, oxidative stress, sapropelic mud.

L31 - The INTERDISCIPLINARY TREATMENT of LUMBAR DISC HERNIA on a PATIENT with CORTICOTHERAPY DEPENDENCY and HISTORY of LYMPH NODE TB

A.A. TOMA^{1,2}, I.B. GHINGULEAC², L.A. GHINGULEAC², L.E. STANCIU^{2,3}, E.V. IONESCU^{2,3}

1. „Ovidius” University of Constanta, Romania

2. St. Andrew Emergency Hospital of Constanta, Romania

3. Balneal and Rehabilitation Sanatorium of Techirghiol, Constanta, Romania

Abstract

Introduction. Disc herniation means the movement of an intervertebral disc. HDL (lumbar disc herniation) is an evolutionary phase of lumbar vertebral discopathy (DVL)

DVL Seize Classification:

Phase I: low back pain

Phase II: lumbar pain and paravertebral contracture

Phase III with four stages from: radicular pain to discartrosis

Materials and Methods. We are presenting the situation of a female patient, aged 62, from the urban area, with confirmed vices of smoking and sedentary lifestyle, which presented in Emergency room in Constanta for lumbosciatalgias and paresthesias, impaired walking and presence of antalgic positions that required hospitalization in Neurosurgery section. The patient has a 15 points Glasgow score is known to have Hypertension, PR, minor stroke and lymph node Tuberculosis (TB).

The muscular and osteoarticular system: apparently integral and difficult to mobilize.

The MRI examination reveals 2 lumbar disc L4 level hernias. The neurosurgical treatment was applied: Discectomy in the L4 disc herniation bilaterally with the removal of the disc fragments. Subsequently, the patient was transferred to the medical recovery department. The patient was evaluated clinically, functionally in dynamics to track the effectiveness of the neuromotor rehabilitation program.

Results. Through the program of early recovery established, the therapeutic yield was significant with the improvement of the clinical symptomatology as well as the marked increase of the functional parameters, assuring the patient a high degree of mobility, of autonomy, but also of reintegration in the social and family life.

Conclusions. The peculiarity of this case was the critical condition of the patient at the hospitalization, corticoddependence, which makes the surgery but also the medical rehabilitation much complicated by functional osteoporosis and low bone consistency. Neurosurgery together with medical rehabilitation have sounded excellent together with in many cases the ability to restore strength, functionality as well as better health of patients, which creates an indispensability between the two specializations.

Keywords: *Disc herniation, Neurosurgery, Rehabilitation*

L32 - Study on the correlation between knee osteoarthritis and anxiety in patients aged over 55

DUICA Lavinia^{1,2}, SZAKÁCS Juliánna³, SILIȘTEANU Sînziana Călina^{4,5}

Corresponding author: Sinziana Silisteanu, E-mail: sinzi_silisteanu@yahoo.com



DOAJ
DIRECTORY OF
OPEN ACCESS
JOURNALS



Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L32> OP Vol.11, No.3, September 2020 p: L32

1 Lucian Blaga University of Sibiu, Faculty of Medicine, Sibiu, România

2 Hospital of Psychiatry „Doctor Gheorghe Preda” Sibiu, Romania

3 George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures, Faculty of Medicine, Department of Biophysics

4 Railway Hospital Iasi - Specialty Ambulatory of Suceava

5 "Stefan cel Mare" University of Suceava FEFS-DSU

Abstract

Introduction. Osteoarthritis, which is a cause of chronic pain and disability with manifestation in any joint, with greater frequency in the joints of the lower limbs, upper limbs, but also at the spine level, affects around 250 million people in the entire world. This condition affects around 10% of the global population (18) and has an impressive impact on people, as it is one of the first 5 causes of disability.

Material and method. The objectives of the treatment made by the patients diagnosed with knee osteoarthritis were: pain reduction, increased joint amplitude, increased muscle strength, increased muscle tone, increased quality of life and reintegration into the family and social environment. In the study, there were discussed demographic data regarding the patients. In order to assess the pain parameter, the VAS scale was used, as well as WOMAC subscales. To assess the quality of life of patients with knee osteoarthritis, the QOL scale (Quality of Life) was used. Anxiety was assessed with the help of a test that comprises the evaluation of symptoms at the cognitive, behavioral and physical level.

Results and discussions. The pain was evaluated on the VAS scale, having a statistically significant evolution for the evaluation moments. Also with the help of the WOMAC index, two other parameters were evaluated, namely joint rigidity and functional capacity, the results being statistically significant in the 3 evaluation moments. The patients' anxiety was evaluated with the help of the anxiety test; the results obtained were statistically significant at the 3 evaluation moments.

Conclusions. It is vital that the recovery treatment in osteoarthritis be individualized and adapted to the age group. In our group, it enabled the reduction of pain and anxiety, the increase of the functional capacity and the quality of the patients' lives. Taking into account the fact that the most affected group in the study group was the active professional one, we can evaluate the size of the recovery and the social, family and professional integration for these patients.

Key words: *knee osteoarthritis, the quality of life, anxiety, kinetotherapy,*

L33 - The Importance of Early Respiratory Rehabilitation in Patients with Duchenne Muscular Dystrophy

Liliana VLĂDĂREANU¹, Monica Iolanda NEDELEA¹, Ana-Maria IFRIM¹

Corresponding author: Liliana VLĂDĂREANU, E-mail: vladareanuanamaria@yahoo.com

1. Techirghiol Rehabilitation and Balneal Sanatorium, Children's Neurorehabilitation Ward

Abstract

Introduction. This article was written as an attempt to emphasize the important role that respiratory rehabilitation holds as a mean to ensure better quality of life and better life expectancy for Duchenne Muscular Dystrophy patients. As new groups of targeted medication are being developed, we are now witnessing longer life spans for patients even in developing countries such as Romania and thus the need for better physical care and better respiratory management.

Materials and Methods. We have tried to group together some of the most important guidelines in the field and to get an image of how complex the team managing these patients is and also to give the auditorium an insight of the team work being done in our unit in order to meet as many as possible of the requirements listed in the guidelines.

Key words: *Duchenne Muscular Dystrophy, respiratory rehabilitation, guidelines of care, rehabilitation team.*

L34 - MUVON PLUS – Adjuvant in Osteoarticular Pain Therapy (Study)

Adriana LUPU

Corresponding author: Adriana LUPU



DOAJ
DIRECTORY OF
OPEN ACCESS
JOURNALS



Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L34> OP Vol.11. No.3. September 2020 p: L34

1. Faculty of Medicine and Pharmacy of Galați

Abstract

Introduction. As an interface between the external and the internal medium, the osteoarticular system is vulnerable to both the bodily imbalances and the experiences accumulated throughout life.

The factors that might affect osteoarticular health include: nutritional deficiencies, certain drug therapies, hormonal imbalances, obesity, chronic diseases, genetic factors, vicious positions, accidents etc.

All these factors facilitate or worsen the disease generically called arthrosis, a degenerative disease that manifests by the decay of the joint cartilage which, further to the reduction of the synovial liquid production, progressively becomes thinner until its destruction. Consequently, in the absence of the cartilage protection, tendons and ligaments become more tense and, by the time the disease has progressed, the cartilage is completely deteriorated, and a friction process intervenes within the joint, entailing painful consequences and restrictive movement.

Topic motivation and objectives. We have the tendency to associate osteoarticular diseases with the elders, but, under certain circumstances, the disease may involve any person regardless of age. That is why, the motivation of approaching this study's topic consists in exposing certain remarks in regard to the complementary therapy of the pains caused by the joint cartilage microlesions, within which the administration of nutritional supplements might represent an adjuvant to allopathic therapy.

Materials and Methods. The study unfolded throughout 3 months and included 30 patients with pains mainly within the coxofemoral and knee joints, who were recommended the MUVON PLUS nutritional supplement.

The patients underwent an initial assessment at the beginning of the study through a questionnaire on pain and how it affects their daily activities, as well as the VAS scale, which was applied at the end of the study in order to acknowledge therapy's effects.

Results. The initial pain overview of the 30 patients and the therapy results are as follows:

- Mild initial pain– 9 (namely 30% of the lot) that disappears at the end of the therapy;
- Moderate pain – 14 (46.67%), whereby the pain disappears in 9 patients;
- Severe pain– 7 (23.33%) with severely affected mobility, moving by means of the walker or companion; at the end of the therapy, 5 patients had mild pain and 2 patients moderate pain.

Conclusions. At the end of the MUVON PLUS therapy, as adjuvant to allopathic treatment, the patients of the studied lot displayed an improvement of their general physical-psyche condition further to the reduction or even disappearance of pain, as well as further to mobility improvement.

Key words: *arthrosis, degenerative disease, pain, mobility, food supplement, MUVON PLUS.*

L35 - A Rehabilitation System Based on Internet of Things (IoT)

Călin Corciovă¹, Doru Andrițoi, Robert Fuior¹, Cătălina Luca¹

Corresponding author: Călin Corciovă, E-mail: calin.corciova@bioinginerie.ro

1. Faculty of Medical Bioengineering, University of Medicine and Pharmacy "Grigore T. Popa" Iasi, Romania

Abstract.

Introduction Internet of things (IoT) is a contemporary technology with the potential to alter or replace the various methods of classical medicine and improve healthcare. The advantage of measuring physical parameters using IoT devices instead of conventional ones is that the connected intelligent IoT devices can carry out measurements independently, and carry out a specific action based on the measurement results. Also, the results of measurements are available via Internet and can be recorded in electronic form, enabling medical personnel to monitor patient's state from any location at any time. Medical rehabilitation institutions are usually limited in space and personnel, so patients are forced to continue practicing physical therapy at home. IoT-based systems allow for the implementation of effective physical therapy from a distance and provide insight into the recovery process of competent medical personnel from a remote location and will provide therapist interaction with the patient through communication technologies.

Material and method The proposed IoT-based system architecture is configured into two segments: a home part and a cloud based software as a management part. The home part requires the installation and configuration in the patient's living environment of components such as the body tracking sensor, the Kinect and muscle sensor. Software as a cloud management segment serves several purposes: it offers software for rehabilitation therapy; collects and analyzes data and represents them in comparative and progressive form; allows medical staff to remotely track the patient's condition and manage additional therapies.

Results and discussions The results of the pilot rehabilitation session after two weeks using a serious game showed significant improvements in rehabilitation. After the trial, the patients presented increased concentration, faster reflexes and greater mobility of the affected hand.

Conclusions The system developed for research can serve as a basis for implementing a system that will be used widely in post stroke rehabilitation and assessment of the recovery.

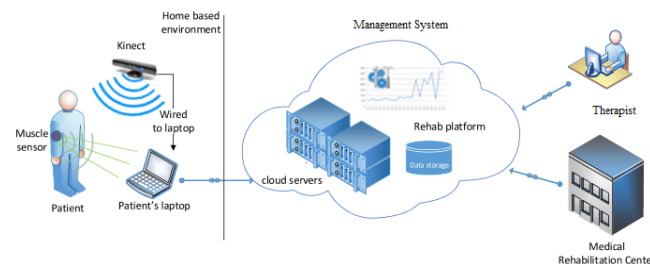


Fig. 1. Block diagram of IoT system rehabilitation

References:

- [1]. Y. Jog, A. Sharma, K. Mhatre, A. Abhishek, *Internet of Things as a Solution enabler in health sector*, International Journal of Bio-Science & Bio-Technology, Vol. 7, No. 2, pp. 9-24, 2015.
- [2]. D. Webster, O. Celik, *Systematic review of Kinect applications in elderly care and stroke rehabilitation*, Journal of Neuroengineering and Rehabilitation, Vol. 11, No. 1, 108, pp. 1-24, 2014.
- [3]. O. Erazo, J. Pino, R. Pino, C. Fernandez, *Magic mirror for neurorehabilitation of people with upper limb dysfunction using kinect*, Proceedings of the 47th Hawaii International Conference on System Sciences (HICSS), 2014, pp. 2607-2615.
- [4]. Tuan Nguyen Gia, Amir Mohammad Rahmani, Tenhunen, H., *Fault Tolerant and Scalable IoT-based Architecture for Health Monitoring*. In: IEEE Access 2015.

L36 - UVEITIS – POSSIBLE ADVERSE REACTION TO SECUKINUMAB IN A PATIENT WITH ANKYLOSING SPONDYLITIS (case report)

D. Oprea^{1,2}, M. Zamfirescu^{2,3}, D. Jimbu³, E. V. Ionescu^{1,2}, C. Oprea^{1,2}, M. G. Iliescu^{1,2}

Corresponding author: *Doinița Oprea*, E-mail: doi_opr@yahoo.com

¹Balneal and Rehabilitation Sanatorium Techirghiol, Techirghiol, Romania

²„Ovidius” University of Constanta, Faculty of Medicine, Constanta, Romania

³Clinical Emergency Hospital Constanta County, Constanta, Romania

Abstract

Introduction

Ankylosing spondylitis (SA) is a chronic inflammatory disease that predominantly affects the spine, but also peripheral joints, the major feature of the disease being the early involvement of the sacroiliac joint.

The most common extraskeletal manifestations are ocular disorders and appear to 25-30% of the patients, being more frequent to HLA B27 positive patients. Episodes of previous acute uveitis, known iridocyclitis, may precede or may occur during or after inflammatory joint manifestations.

Materials and Methods

We present a 41-year-old patient diagnosed 11 years ago with ankylosing spondylitis, axial form, without extra-articular manifestations, periodically treated with antiinflammatory drugs and balneary treatment, but with inefficient clinic and biological response. Since november 2019 his treatment with Secukinumab, started to improve the clinic and paraclinic symptoms. Secukinumab is a fully human monoclonal antibody, the first care that selectively targets IL-17A, an essential cytokine treatment that produces inflammation, and bone remodeling, characteristic of SA.

Results

In January 2020, the patient presents increased pain and redness in the right eye area, subsequently diagnosed as anterior acute uveitis.

Conclusions

This anterior acute uveitis, may be a extra-articular manifestation in the context of the natural evolution of the disease insufficiently controlled by the recently introduced therapy, or it may be an adverse reaction to Secukinumab, being known that the optic misfunction is a less common side effect.

Keywords: ankylosing spondylitis, uveitis, Secukinumab

L37 - LOW DUTY-CYCLE ULTRASOUND APPLICATION FOR PHYSICAL THERAPY COMPLEX PROGRAM ON THE RECOVERY OF CALCANEAL SPURS

Ilie ONU^{1,2}, Mariana ROTARIU¹, Robert GHERGHEL²



¹University of Medicine and Pharmacy „Grigore T. Popa”, Iași, România

² Micromedica Medical Clinic, departments of orthopedics and physiotherapy, Piatra Neamț
elipetromed@yahoo.com, rotariu29@yahoo.com, gherghelrobert@yahoo.com

Abstract.

Introduction: Calcaneal spurs are a very common reason why patients go to the medical offices. The calcaneal spur is a bony protrusion that appears at the level of the plantar fascia, but most commonly at the insertion of the plantar fascia on the heel. It is considered calcaneal spur from 2mm upwards, diagnosed on the profile incidents of calcaneal radiographs. The pain is in a close relation with the size of the spur, that are being given by the level of compression of the lower calcaneal nerve, with the inflammation of the spur, with the thinning of the fat layer surrounding the heel and the plantar fascitis. Physical Therapy is a non-invasive treatment method with appreciable effects in the short and medium term in reducing the symptomatology of calcaneal spurs and help regaining the characteristics of the ankle joint mobility, bipedal station and walking.

Materials and methods: The study was carried out on 6 month time period in the Piatra Neamț Micromedica Clinic on a group of patients diagnosed with calcaneal spurs, aged 39-67 years. The study aimed to assess the level of pain reduction, as well as the increase of the mobility of the ankle joint after the sessions of physical therapy. The group consisted of 60 patients diagnosed and confirmed radiologically with spurs between 5 and 20 mm. For pain assessment the VAS scale was used, being evaluated in the bipedal standing position, in walking and resting, both before and after the physical therapy treatment. For measuring the joint mobility of the ankle, for plantar and dorsal flexion, it was used the goniometric measurement method at the beginning and at the end of the physical therapy treatment. Patients underwent a physical therapy treatment complex consisting of 10% duty-cycle plantar ultrasound application, TENS, passive and active stretching, for 10 consecutive days. Eligible patients were those with VAS 5-6, who had supportive medication prior to physical therapy treatment.

Results: The initial evaluation, was followed by another one at the end of the 10-session treatment. The obtained results were analyzed in terms of two indicators: visual analogue scale (VAS) for pain intensity measurement and gonimimetric tests of ankle joint mobility. The main result was decreased pain intensity and increased joint mobility. After the completion of the 10 sessions treatment, the group of patients showed substantial clinical improvements: the VAS decreased from 6 to 1 in both rest, biped and walking.

Conclusions: Following the analysis of pain and function, we can say that the physical therapy treatment plan greatly reduced the symptoms and improved the function of the foot. Patients effectively described the program from the perspective of pain relief even during the sessions.

Keywords: heel pain, calcaneal spur, physical therapy, ultrasound

L38 - Pulmonary Rehabilitation in Congenital Chest Malformations – Case Report

Paraschiva POSTOLACHE¹, Doina-Clementina COJOCARU¹, Diana BIVOL²

Corresponding author: Paraschiva POSTOLACHE, E-mail: postpar04@yahoo.com



DOAJ
DIRECTORY OF
OPEN ACCESS
JOURNALS



Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L38> OP Vol.11, No.3, September 2020 p: L38

1. “Grigore T. Popa” University of Medicine and Pharmacy Iași, Romania

2. Regional Institute of Oncology, Iasi, Romania

Abstract

Introduction. Pectus excavatum is a congenital chest malformation that has several etiopathogenic mechanisms: imbalanced costochondral hypertrophy, intrauterine traumatism or rahitism. This pathology is suitable for respiratory rehabilitation (RR), a complex, multidisciplinary process that addresses to all patients with chronic pulmonary disease.

Materials and Methods. We report the case of a 43-year-old male, nonsmoker, diagnosed with pectus excavatum by the age of 5. Sternochondroplasty was performed, but later surgical reoccurs when is diagnosed with pulmonary cysts (lower right lobectomy).

The physical examination showed an asimetric and deformed chest, pectus excavatum, post-operative scars in the right hemithorax, crepitant rales, SpO₂=94%; the spirometry shows restrictive ventilatory dysfunction; the patient has completed the tests with an EKG, effort capacity evaluation, evaluation of dyspnea scales, the Lawton Instrumental Activities of Daily Living, etc.

RR in patients with congenital malformations involves medical education, changing lifestyle, training the respiratory musculature and the benefits are: improving the capacity of effort, emotional state, reducing dyspnea, anxiety, depression, the number and severity of exacerbations and hospitalization, increasing the quality of life and improving psycho-social reintegration.

Results. The patient underwent the RR program and benefited of respiratory kinetotherapy, respiratory muscular training with decreasing dyspnea, expectoration and increasing effort capacity. At the evaluation of dyspnea, the mMRC scale showed an improvement from a grade 3 to 1 and BORG scale showed an improvement from 6 to 3. At 6-Minute Walk Test the patient showed an improvement of the effort capacity (from 63% of walking distance on the first day of hospitalization to 80% in the last day).

Conclusions. This malformation can go unnoticed at birth, but it increases getting older, causing the compression of intrathoracic organs. Although the patient underwent correction surgery in childhood, it relapsed with reoccurrence of the excavation, leading to an inesthetic appearance and pulmonary function alteration.

L39 - Biological Models for Sulphurous Thermal Water Inhalation, Simulated from a Numerical Perspective

Mariana ROTARIU¹, Marius TURNEA¹, Dragos AROTARIȚEI¹, Iustina AVRAM¹,
Corresponding author: Iustina AVRAM, E-mail: avram.iustina@yahoo.com



Abstract

Introduction. The lungs are the target location for inhalation vapors and therefore the calculation of the total dose absorbed in each airway during inhalation exposure is essential. Inhalation of thermal water with antioxidant properties is used empirically for COPD (chronic obstructive pulmonary disease). Efficiency of sulphurous mineral water in chronic rhino-sinus, eg Although high levels of hydrogen sulphide can be extremely toxic, however, we must say that a dose pattern absorbed in each airway during inhalation exposure is useful as a predictor of daily treatment during treatment. with sulfurous mineral water.

Materials and Methods. The existing mathematical models for vapor absorption in lungs are taken into account in a systematic manner. Lower respiratory tract uptake of vapors versus air partition coefficients are one of the models that is analyzed in order to describe the process by a simpler Gray-Box model. The method is applied to prediction of lung fraction of inhaled vapors as a function of partition coefficient for hydrogen sulfide, formaldehyde, acrolein, and acetaldehyde.

Results. The experimental results showed a good fit of data with the mathematical formula, the rooted mean square error below 5% in most of the case, and a prediction with an error below 1% in the case of curves obtained by PBPK model obtained by solving numerically the system of differential equations.

Conclusions. Alternative to pharmacokinetic, mathematical formulas discovered by mathematic black-box approach can be used to predict sulphite absorption and excretion or vapor uptake in the lung. The disadvantage of lack of connection with physiological phenomenon is compensate when it is necessary a simple mechanism for prediction based on experimental data and the modelling process based on physical and chemical assumptions is very complicated or it is not completely elucidated.

Key words: *pulmonary vapor absorption, mathematical models, inhalation dosimetry, numerical simulation.*

L40 - "Eppur si muove" - Clinical case: evolutionary "saga" during the last 6 years: posttraumatic subdural hematoma, decompressive craniectomy, right hemiplegia and aphasia, cranioplasty, hydrocephalus and porencephaly, post-traumatic encephalopathy - in remission.

Aurelian Anghelescu^{1,2} Anca Sanda Mihaescu¹, Magdoi Anca Magdalena³, Gelu Onose^{1,2}

Corresponding author: **Aurelian Anghelescu**, E-mail: aurelian_anghelescu@yahoo.co.uk

Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L40> OP Vol.11. No.3, September 2020 p: L40

1. Teaching Emergency Hospital Bagdasar-Arseni, Bucharest
2. Carol Davila Medicine and Pharmacy University, Bucharest
3. CMI Dr Magdoi Anca. Bucharest

Abstract.

Decompressive craniectomy (DC) is an emergency neurosurgical procedure used in cases of severe intracranial hypertension, a condition commonly associated with severe TBI. The procedure is often life-saving, but it exposes the brain to atmospheric pressure in the subsequent neurorehabilitation period, which alters intracranial CSF physiology and leads to complications such as hydrocephalus, hygroma.

The indications for cranioplasty after decompressive craniectomy are for restoring brain protection and aesthetic appearance. Studies have repeatedly noted improvement in neurological status after cranioplasty. It restores normal intracranial physiology with respect to changes in intracranial and postural pressure. A systematic review suggests that this intervention improves the hydrodynamic balance of the CSF disturbed after decompressive craniectomy, with concomitant improvement in neurological function.

The case presents a male patient, monitored for 6 years (12 in-patient admissions and 4 out-patient evaluations).

At age 59, the subject had suffered a severe head injury (02.07.2014, affirmative by accidental fall from 3 m) with multiple hemorrhagic lesions (bifrontal, bioccipital, biparieto-temporal) and left cerebral subdural hematoma. On 04.07.2014 a large fronto-temporo-parietal decompressive left craniotomy was performed, for the mass lesion evacuation. Acute evolution was exacerbated by a severe toxic hepatic cytolysis (probably induced by thienam).

He was admitted to the neurorehabilitation Clinic during 31/07/2014 - 24/10/2014. The neuropsychological condition was severely degraded, had right hemiplegia and mixed aphasia, intense psycho-motor agitation, severe dysphagia for solids and liquids, neurogenic bladder, anemia.

Cerebral CT examination revealed the persistence of a small residual parieto-occipital hematoma (resolved gradually during hospitalization).

The patient had a favorable neurological evolution: he gradually recovered the receptive and then (partially) the expressive component of the language.

The psycho-organic syndrome with psychomotor agitation and episodes of hetero-aggressiveness, reversal of the sleep-wake rhythm and negativism were partially solved (even though present at discharge). The swallowing and bladder continence were significantly improved. The hand functional gripping ability was mostly recovered, the subject could walk, requiring permanent support and supervision for daily activities related to nutrition, self-care, problem solving and interrelation. Barthel disability score was 35%

In the first decade of January 2015, cranioplasty was performed by fixing a composite material. After cranioplasty, there was a rapid decline of the neurological status, worsening of the locomotor capacity, severe ataxia (constant tendency to right latero-deviation, requiring bilateral support), worsening of speech and swallowing (especially for fluids), increased neuropsychiatric agitation, negativism, incontinence, disruption of the cognitive and executive superior cerebral functions (MMSE = 6/30, Barthel score = 5%).

The comparative analysis of the CT scans revealed an active internal hydrocephalus (the 3rd ventriculus diameter had increased from 10-11 mm to 18 mm), cerebral interstitial edema, and associated ischemic vascular injury. The CT scan imaging was paralleled by the atrophic changes of the optic nerve papilla. The manometric evaluation detected increased pressure values (200 mm), indicating a decompressive shunt.

The family preferred the primary conservative approach. The synergistic combination of inhibitors of CSF secretion (acetazolamide 750 mg/ day), dexamethasone, neurotrophic factors, anticonvulsants (CBZ 600 mg/ day), sedatives and neuroleptics were followed by a slow improvement, gradually achieved in 7 months, time required for re-balancing the intracranial pressure.

In November 2015 he still had important dysmnestic elements (MMSE was 18/30), but no longer urinary incontinence. The vertical balance was improved, and the Barthel score was 45%.

Around the winter Holidays 2015 seizures had appeared (focal epilepsy with secondary generalization), which imposed modification of the therapeutic regimen (levetiracetam 1000 mg and trileptal 300 mg).

The kinetic programs were gradually adapted to the progressive neurological evolution.

From January 2016 no seizures has occurred. The family has reported two short episodes of TS disorientation and dizziness, interpreted as a complex psycho-cognitive focal symptomatic epilepsy (juged in the context of the bioelectrical modifications).

On the last 3 EEGs (2016-2019) a focal pathological electrical pattern has persisted. In November 2019 his last Barthel score was 55%, the paretic limbs deficit was almost non-existent, and the patient had a good psychological recovery (film).

Conclusions

Despite the poor biological condition and severe brain injuries (post-traumatic and post-surgical) the subacute neurological evolution was favorable during the subject's first admission to the Neurorehabilitation Clinic.

Due to the precarious clinical condition, cranioplasty after decompressive craniectomy was not performed earlier (below 85-90 days), which explains the major differences between pre- and post-cranioplasty neurological status, neuro-psyhic "collapse" and rapid CT image degradation.

Extended craniectomy, Barthel \leq 70 and age over 45 years are independent predictors of complications, aspects highlighted in the literature and cumulated in the presented case.

The global neurological evolution was gradually favorable (towards a mild, almost imperceptible ataxic hemiparesis, in Nov. 2019), in parallel with the stabilization of the intracranial pression. This statement is supported by the cerebral CT imagery: from an active internal hydrocephalus, with signs of evolutivity and interstitial edema, associating ischemic lesion, towards a normotensive asymmetric hydrocephalus and porencephaly (although gigantic and deforming), but stable and stationary during the last 4-5 years of evolution.

The contrast between the impressive imagery aspect and the incredibly good neuropsychological status was the reason for presenting the case as a neurorehabilitation "saga", with an evolution spread over six years.

The paper advocates for a carefully follow-up and prompt intervention in order to prevent recurrences and / or complications (secondary and tertiary prophylaxis).

Key words: subdural hematoma, decompressive craniectomy; cranioplasty; hydrocephalus; post-traumatic encephalopathy; neurorehabilitation

L41 - Management of tenosynovitis (de Quervain's disease) of the wrist

Doina Maria MOLDOVAN¹, Gabriela DOGARU²

Corresponding author: Doina Maria MOLDOVAN, E-mail: ortoped687@gmail.com



DOAJ
DIRECTORY OF
OPEN ACCESS
JOURNALS



Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L41> OP Vol.11, No.3, September 2020 p: L41

1. Orthopedic and Traumatology Clinic Division, Targu Mures
2. "Tuliu Hatieganu" University of Medicine and Pharmacy Cluj-Napoca, Clinical Rehabilitation Hospital Cluj-Napoca

Abstract

Introduction. De Quervain's tenosynovitis is defined as the inflammation of the synovial sheath of the tendons in the first extensor compartment of the wrist (abductor pollicis longus APL and extensor pollicis brevis EPB tendons).

Material and method. Using PubMed, Medscape and Cochrane databases, 12 articles dealing with this specific issue were found. The articles were published in English during the period 2015-2020. A good management of tenosynovitis allows establishing the steps and the method (conservative or surgical) to be followed in the case of patients with de Quervain's tenosynovitis (dQ).

Results. Tenosynovitis treatment includes many methods, most of which are conservative. The treatment method with the highest success rate is corticosteroid injection (CSI) at four separate sites in the first dorsal compartment of the wrist and prescription of orthoses. In some patients with a high relapse rate of dQ tenosynovitis, the presence of a fibrous septum subdividing the first extensor compartment has been reported. Corticosteroid injection does not have the expected effect in these patients. Ultrasound is the easiest method that can detect the presence of the fibrous septum. The recommended treatment for these patients remains surgical treatment.

Conclusions. The choice of conservative or surgical treatment for patients with dQ tenosynovitis depends on the absence or presence of an accessory fibrous septum subdividing the first extensor compartment.

L42 - The Management of secondary hip osteoarthritis after essential epiphysiolysis using viscosupplementation.

S. Demirgian, V. Marin, T.V. Surdu, M. Surdu, O. Surdu

Abstract

Introduction: Slipped femoral capital epiphysis(SPCE) occurs during the adolescent rapid growth period when the epiphyseal growth plate is weakened and the capital epiphysis is displaced downward and backward. The immediate effect is a disabling external rotation deformity of the lower extremity. The early serious sequelae are avascular necrosis of the femoral head and chondrolysis which involves the opposing acetabular and femoral articular cartilage and eventuates in an intractable painful, stiff hip.

Material and method: We present the case of 35 years old man, diagnosed with essential epiphysiolysis. The symptomatology had an insidious onset with walking difficulties (gait abnormalities) and hip pain for few month. The patient was evaluated anamnestic (history of the illness), clinical and paraclinical .

Results: Taking into account the age of our patient we decided to treat conservatory, meaning medication, complex physical treatment and viscosupplementation.

Conclusion: SPCE was first described in 1889. The disease is not common for the age of our patient, the period of rapid growth from 10-17 years of age. The patient was during his childhood under treatment with anterior pituitary growth hormone, and can explain the late debut of disease. Viscosupplementation was tried in order to try to avoid for know the hip arthroplasty.

Keywords: Slipped femoral capital epiphysis, anterior pituitary growth hormone, painful, stiff hip.

L43 - God's Mathematics: 1+1 Equals More than we Know. Favorable Evolution from Vegetative State and Severely Deposturizing Tetraplegia, To a Minimum State of Consciousness, Then Post-Traumatic Encephalopathy and Functional Tetraparesis

Aurelian ANGHELESCU^{1,2}, Catalina AXENTE¹, Cristi RADUCAN¹, Anca Magdalema MAGDOIU³, Gelu ONOSE^{1,2}

Corresponding author: Aurelian Anghelescu. E-mail: aurelian_anghelescu@yahoo.co.uk

Balneo Research Journal

DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L43>

OP Vol.11, No.3, September 2020 p: L43

1. Teaching Emergency Hospital "Bagdasar-Arseni"

2. University of Medicine and Pharmacy "Carol Davila", Bucharest, Romania

3. CMI Dr Anca Magdoiu

Abstract

Introduction. Survivors of severe brain trauma (TBI) have marked disorders in the state of consciousness, from coma to vegetative state (VS) and minimal state of consciousness (SMC).

The VS is described as a pathological condition characterized by complete absence of any conscious activity (no self-awareness, no connection to the environment), with complete or partial preservation of the hypothalamus, and autonomic brain stem functions. Only 14.29% of patients in VS manage to recover; good outcomes factors being young age, male gender, cause of brain injury, time elapsed from TBI at the beginning of the neurorehabilitation program.

Case presentation. A 21-year-old female patient, student, was transferred to Bagdasar Arseni Hospital neuromotor rehabilitation clinic on 08.10.2019 in vegetative state (alert state without consciousness, psycho-sensory a-reactivity), severe spastic tetraparesis with amyotrophy and myo-tendon retractions, with disabling deformations and quasi-irretrievable flexed upper limbs, severe malnutrition, feeding through gastro-stoma, neurogenic bladder, SUF. Medical history: on 20.08.2019 the patient suffered a polytrauma after falling from heights (defenestration from 30 meters, the 8th floor of the building - possible suicide attempt), followed by severe TBI (GCS 6p at hospitalization), with multiple cerebral hemorrhagic foci (operated), C7 spinal fracture (conservatively treated), chest trauma and pulmonary concussions. After the resolution of the brain hemorrhagic foci, the patient was monitored almost two months in the ICU. Tracheotomy with cannulation, and gastro-stoma feeding by PEG were necessary. The global evolution has been shaped to a vegetative state. Muscle spasticity and deformities were corrected by local spasmolytic therapy with botulinum neurotoxin, injected at our clinic (but rather late, in the evolutionary stage) combined with a sustained program of kinetherapy and electro-physiotherapy (posture correction, use of assistive devices and orthoses), mobilization, progressive verticalization, laser program and diapuls). Medication consisted of prophylactic anticoagulant treatment, gastro protection, antibiotic episodes of infections, synergistic association of neurotropic factors, anticonvulsants. The patient gradually began to vocalize, her face became more expressive, she voluntarily mobilized her limbs; she has improved from vegetative state to a state of minimal consciousness, then to post-traumatic encephalopathy with functional spastic tetraparesis.

At discharge she was able to walk with bilateral support on the parallel bars, assisted by the physiotherapist. Her cognitive and executive cerebral functions showed remarkable evolution.

Conclusions. Approach to patients in VS is realized in an inter- / multidisciplinary team, having in epicenter rigorous measures of neurorehabilitative nursing, to overcome complications and improve the patient's biological status. Along with the complex recovery program, the family had a major supportive role, along with the spiritual, religious assistance. *Ad vitam* prognosis of *ad functinem* outcomes depends on a long-term rehabilitative treatment, and sustained psychological support. It also involves socio-economic and legislative factors. The main objective, the "final piece of the puzzle" is represented by the socio-vocational reintegration (return as a student).

Keywords: TBI, vegetative state, tetraplegia, minimally conscious state, post-traumatic encephalopathy, botulinum neurotoxin

L44 - Very Complex, Difficult and Sustain Rehabilitative care Management in a case of Vegetative State secondary to Anoxic Encephalopathy after Acute Myocardial Infarction, with Connected Comorbidities such as Pressure Sores and Deep Venous Thrombosis in a lower limb

Luminița NIRLU¹, Ana Carmen REBEDEA¹, Laura Georgiana POPESCU¹,
Ali OSMAN SAGLAM¹, Gelu ONOSE^{1,2}

Corresponding author: Luminița NIRLU, E-mail: nirluluminita@gmail.com

1. Teaching Emergency Hospital "Bagdasar-Arseni"

2. University of Medicine and Pharmacy "Carol Davila", Bucharest, Romania

Abstract

Introduction. Hypoxic-ischemic brain injury encompasses a complex constellation of pathophysiological and cellular brain injury induced by hypoxia, ischemia, cytotoxicity, or combinations of these mechanisms. HIBI after cardiac arrest is a leading cause of mortality and long-term neurologic disability, including significant changes in personality and cognitive impairments in memory, cognition, and attention, in survivors (1) (2).

Materials and Methods. Having the patient's consent and The Teaching Emergency Hospital "Bagdasar-Arseni" Ethics Committee N.O 34132 from 18.11.2019, the current case report presents a 62-year-old male patient diagnosed with vegetative state after hypoxic-ischemic encephalopathy secondary to resuscitated cardiac arrest, pharmacologically active stent angioplasty, tracheostomy, stage 3 hypertension, gastrostoma feeding, neurogenic bladder (indwelling catheter), myoclonic status epilepsy at onset, chronic obstructive lower limb arteriopathy, single surgical kidney. The patient was admitted in the Neurorehabilitation Clinic of the Teaching Emergency Hospital „Bagdasar-Arseni” (TEHBA) Bucharest, Romania, associating severe alteration in self-care abilities, locomotor dysfunction and specialized rehabilitation treatment and nursing.

Results. The clinical and functional evaluations were objectified through the assessment scales/scores implemented in our Clinic's Division. The patient had a stationary evolution during his 71 days of hospitalization, the scale scores remains the same at the admission and at the discharge: Motor FIM (Functional Independence Measure) 13/91, Cognitive FIM from 5/35, Asworth modified scale 1, Penn scale 1, GOS-E scale 2/8, Rankin scale 5/5, Stratify Risk Scale 0/6, FAC (Functional Ambulation Categories) 0/5.

Conclusions. Our main objective was, first of all, to avoid any new complications, to which this disease is mostly prone. This has been an ample and complex challenge for our entire neurorehabilitation team due to multiple comorbidities (stage 3 hypertension, ischemic heart disease, sores, deep venous thrombosis, multiple urinary tract infections). The approach of such a clinical case involved keeping the patient in an overall stabilized state, regarding his basic biology and somatic functions. His progresses were small but quite important and the neurorehabilitation team was constantly adapting the therapeutic plan to the extremely numerous restrains. The prognostic of this patient remains, however, reserved.

References

- 1.[https://www.researchgate.net/publication/236912972_Prolonged_Delirium_Secondary_to_Hypoxic-ischemic_Encephalopathy_Following_Cardiac_Arrest]. [Online]
- 2.<https://ccforum.biomedcentral.com/articles/10.1186/s13054-017-1670-9>. [Online]

L45 - Very Good Neuromotor and Psycho-Cognitive Rehabilitation Outcomes in a Post-TBI Patient with Initially Severe Fidget and Breath Insufficiency, with Secondary Eso-Tracheal Fistula, after Necessity Tracheostoma in Subsequent Important Pulmonary Complications - Case Report

Laura Georgiana POPESCU¹, Luminița NIRLU¹, Ana Carmen REBEDEA¹, Ali Osman SAGLAM¹, Gelu ONOSE^{1,2}
Corresponding author: Laura Georgiana POPESCU, E-mail: laurapopescy@yahoo.com

1 Teaching Emergency Hospital „Bagdasar-Arseni” Bucharest (TEHBA)
2 University of Medicine and Pharmacy “Carol Davila” in Bucharest, Romania

Abstract

Objective. Having the patient’s consent and The Teaching Emergency Hospital “Bagdasar-Arseni” Ethics Committee’s approval, N.O. 34137/18.11.2019, this article presents the evolution of a 59-year-old patient involved in a road accident (pedestrian) with severe TBI, severe fidget and breath insufficiency with secondary eso-tracheal fistula, after necessity tracheostoma in subsequent important pulmonary complications.

Results and methods. The data presented include patient history, clinical and imaging examinations, assessments of neuro functional deficits through specific scales, medical and kinesiological treatment that led to favorable patient progression from psycho-cognitive status after severe TBI (severe psychomotor agitation and dislogia, bifrontal syndrome, post-traumatic encephalopathy) in polytraumatic context associated with locomotor and self-care dysfunction, neurogenic bladder and complicated with eso-tracheal fistula after necessity tracheostoma due to subsequent important pulmonary complications to slight tetraparesis with predominance of motor deficiency in the lower limbs (left rather than right), remitted high tracheal stenosis secondary to the operated eso-tracheal fistula, remitted neurogenic bladder, with the patient verticalization, maintaining orthostatism and mobilization over small distances.

Discussions/Conclusions. The particularity of the case: the favorable progression which emerged after a persistent therapeutic rehabilitation team-run program despite the limitations imposed by the mental state of the patient during hospitalization and the presence of multiple severe pulmonary complications that required treatment performed in collaboration with other specialists.

Keywords: *neuromuscular rehabilitation, traumatic brain injury, bifrontal syndrome, polytraumatism, eso-tracheal fistula.*

L46 - THE ROLE OF FIBROBLASTS AND TGF β IN THE PATHOGENESIS OF SYSTEMIC SCLEROSIS

Mihaiela CHICU, C.C. COPACIANU

Corresponding author: **Mihaiela CHICU**, E-mail: mihaielabitere@yahoo.com

University of Medicine and Pharmacy U.M.F. "Gr.T. Popa" Iasi
Clinical Emergency County Hospital "Sf. Spiridon" Iasi

Abstract.

Introduction

Fibrosis is the marker of the disease, being the consequence of the interaction between vascular dysfunction and immune abnormalities in individuals with genetic predisposition.

The excessive deposit of matrix components increases the stiffness and irreversible tissue remodeling.

Discussion

The fibroblasts activation in scleroderma is a consequence of the cells interactions, reactive oxygen species, cytokines, mechanical stimulation. The pathological fibroblasts has uncontrolled activity, resulting an excess accumulation of extracellular matrix components.

Fibrosis gene expression is related to autocrine, endocrine and paracrine factors, cell interactions, hypoxia, reactive oxygen species. Many cytokines are involved; between them, the TGF β has the most important role. The three isoforms of TGF β are secreted by platelets, monocytes / macrophages, dendritic cells, fibroblasts.

TGF β is primarily responsible for:

- stimulating the synthesis of collagen, fibronectin, proteoglycans, elastin;
- stimulating the release of endothelin-1 (ET-1);
- the generation of oxygen free radicals;
- inhibition of apoptosis of fibroblasts and myofibroblasts.

Conclusions

The changed Rodnan score is the gold standard for evaluation of skin fibrosis in patients with scleroderma. Although fast and noninvasive, the Rodnan score has some limitations because it is subjective, varying between various evaluators, it is a semi-quantitative assessment and can not differentiate between edema, thickening, adhesion.

However, at this time it is the only valid measuring instrument of skin fibrosis.

Keywords: fibrosis, fibroblast, TGF β .

L47 - The gripping recovery in rheumatoid arthritis patient by combining kinetotherapy with TuiNa massage

Victoria CHIHAI¹, Alisa TĂBÎRȚĂ¹, Oleg PASCAL¹, Mihail CÎRÎM¹

Corresponding author: Victoria CHIHAI, E-mail: victoria.chihai@usmf.md



DOAJ
DIRECTORY OF
OPEN ACCESS
JOURNALS



Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L47> OP Vol.11, No.3, September 2020 p:

1. The University of Medicine and Pharmacy "Nicolae Testemitanu", Chisinau, Republic of Moldova
The Department of Medical Rehabilitation, Physical Medicine and Manual Therapy

Abstract

Introduction. Rheumatoid arthritis (RA) is a chronic inflammatory joint disease with autoimmune pathogenesis and unspecified etiology. [1, 3, 6] It is characterized by symmetrical arthropathy with rapidly deforming and intensely destructive evolution. The clinical picture of the disease is inflammatory joint pain. Pain specific is the increased rest and pain reduction during joint mobilization. Functional treatment involves limiting the installation of joint deformities, maintains muscle tone and joint mobility, and maintains a psychological and social balance of the patient. [2, 4]

Case presentation. The AC patient with the diagnosis of rheumatoid arthritis, the activity level DAS / DAS28 2.85, the age of 64, the urban environment, former professional sports basketball, was admitted to the IMSP "State Hospital" (Chisinau) accusing physical asthenia, fever nocturnal, inadequacy, weight loss, myalgia, symmetrical joint pain in the joints of the hand, morning joint pain for 90 minutes. By testing pre-tension (Sidenco, 2005; Frost, 2002) [5] the following parameters were determined: when testing two-finger pens and police-fingers: 7 points, testing of poly-finger pens 2 points, testing palms 5 points. The pain was evaluated according to the VAS scale with 8-9 points. For the evaluation of the quality of life, the HAQ (Health Assessment Questionnaire) scale was applied, initially the score being 2.08 points.

The patient is non-smoker and denies alcohol and drug use, the disease is 19 years old

Results. The patient received drug treatment and conventional rehabilitation therapy (kinetotherapy, electrotherapy) and TuiNa massage for 8 weeks. At the end of the treatment the morning redness decreased to 30 minutes, the test of the two-fingered pens and the police-fingers accumulated 3 points, the testing of poly-finger pens 0 points, testing handheld pens 2 points. The pain evaluated according to the VAS scale was 4-5 points and the daily activities after the HAQ scale 0.9 points.

Conclusions. The complex programs of medical rehabilitation with kinetic techniques associated with the assisted and individualized TuiNa massage have considerably improved the functional status of the person with functional retention of the rheumatoid hand.

The two-finger and police-finger tweezers test, the poly-finger tweezers test and the hand-held tweezers test can be gripping assessment tools for the rheumatoid hand.

Key words: *Rheumatoid arthritis, pre-tension evaluation, TuiNa massage*

References

1. Brăilescu Consuela, Methods for clinical and functional evaluation of the post-traumatic and/or post-surgical hand, *Palestrica Mileniului III – Civilizație și Sport* Vol. 12, no. 2, Aprilie-Iunie 2011, p.151–158
2. Chihai V. Principii de reabilitarea funcțională în artrita reumatoidă. În *Buletinul Academiei de Științe a Moldovei Științe medicale*, 2 (54), 2017, p. 324-326
3. Onose G. Recuperare, *Medicină Fizică și Balneoclimatologie - Noțiuni de bază și actualități*. Vol.1, Ed. Medicală, București 2008, p.90-117
4. Opreș-Belinschi D. și a. Durerea în patologia reumatică. În *Terapia durerii*, București, 2017, p.101
5. Sidenco EL. Metodica recuperării mâinii-Aplicații în kinetoterapie și medicina sportivă. Ed. Fundației România de Măine, București 2005, p.100-152
6. Zhang B., Combe B., Rineval N., Felson DT. Validation of AC/EULAR definition of remission in rheumatoid arthritis from RA practice: the ESPOIR cohort. *Arthritis Res Ther.* 2012, jun 29; 14(3):R156

L48 - Upper Back Pain, Neck Pain and Stress in school children

Monica Adriana FARAGO¹, Manuela Simona POP¹

Corresponding author: M.A. Farago, E-mail: monica_farago@yahoo.co.uk

1. University of Oradea, Faculty of Medicine and Pharmacy, Romania

Abstract

Introduction. Stress can affect anyone who feels overwhelmed – even kids, and in consequence, they are exposed to an increased risk of multisystem health problems, often with poor health outcome in adulthood.

Aim of the study. to demonstrate if somatic pain in children (upper back pain in this study) is correlated to their stress, poor posture activities, or due to both conditions.

Material and method. The subjects (n=31) were hospital outpatients, with ages between 7 to 16 years old, referred to rehabilitation department for upper back pain \pm dysfunction. Pain was measured by Children Pain Rating Scale. The clinical exam appreciated: weight issues, postural control, muscle pain and contraction and joint range of motion. The interview included questions regarding the number of hours spent in seated positions per day, daily time screen, sport activities and daily stress sources.

Results. A mild to moderate level of pain; most of the children had problems in postural control (forward head posture, kyphosis, rounded shoulders, hyperlordosis); contracture in upper trapezius, levator scapulae, pectoralis, quadratus lumborum and hamstring muscles; seated position time ≥ 9 hours/day; screen time 1-4 hours/day; no sport activities; stressors identified in all patients; poor sleep in 50% of the patients. Upper back pain was correlated to prolonged seated positions with arms in front of the body, but also to the stress and anxiety that is recognized in the subjects.

Conclusions. If we recognize the stress in the etiology of upper back pain in children, in addition to rehabilitation therapy, for optimal therapeutic results, we should take psychological interventions into account too.

Key words: *upper back pain, stress, schoolchildren.*

L49 - PSYCHOLOGICAL DIMENSIONS OF POST-STROKE REHABILITATION

Aurelia Glavan



Email: glavan_aurelia@yahoo.com



Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L49> OP Vol.11, No.3, September 2020 p: L49

Emergency Medicine Institute, Chişinău, Republic of Moldova

Abstract.

Introduction: The traditional forms of psychological assistance in medical institutions are limited due to the shortage of qualified psychologists, thus greatly influencing the effectiveness of rehabilitation. The psychological service takes into account: organization of psychoeducational programs, development of the maintained person-environment resources, learning the self-managing behaviour for the adjustment to the disease. We set out an experimental research of the *psychological state* of individuals during the post-stroke rehabilitation, which takes them, as well as their families, through physical and emotional pain, carried out during 2017-2019, in the neurology wards of the Emergency Medicine Institute, Chişinău.

Phase I

Sample - 110 people in post-stroke rehabilitation with emotional changes versus 50 persons without.

Objective: review of the particularities of the affectivity of adults aged 18-75 after stroke ;

Materials/Methods: Mental state assessment Test by H. J Eysenck.

The values of anxiety, frustration, aggression, rigidity were highlighted, because of higher indices, serving as elements that block the rehabilitation.

N	Mental states	Group 1 M±m	Group 2 M±m	p
1.	Anxiety	11,76±0,39	11,48±0,53	p>0,05
2.	Frustration	10,77±0,43	10,26±0,66	p>0,05
3.	Aggression	10,94±0,44	11,36±0,58	p>0,05
4.	Rigidity	11,41±0,37	12,36±0,48	p>0,05

Phase II

Psychotherapeutic intervention program: Self-regulation of the affective-behavioral range of people during the post-stroke rehabilitation period

Goal - forming the skills for emotional-behavioral self-regulation in post-stroke individuals.

Objective: decrease of psycho-emotional tension; installing the state of relaxation; balancing mental states; stimulation of positive self-perception.

Sample — 20 subjects with increased indices (10 subjects in the control group; 10 subjects in the training group); the presence of disability after stroke. Ten sessions were held with each subject, lasting 60 minutes each.

Evaluation of the intervention program's efficiency: two groups of ten subjects each were researched - experimental retest group, control group; a direct comparison was made between the studied groups.

Conclusions

The evaluation identified negative affective states: anxiety, aggression, frustration, in response to long-term rehabilitation overloads.

The Eysenck test showed the modification of all its indices, following the *Psychotherapeutic Intervention Program*, demonstrating an adaptable behavior to social factors.

L50 - ESSENTIAL OILS USED IN SPA CENTERS IN THE EUROPEAN UNION: LEGISLATION ASPECTS AND POTENTIAL BENEFICIAL EFFECTS

Andreia Corciovă¹, Ana Flavia Burlec¹, Alina Săcărescu², Irina Macovei¹, Cornelia Mircea¹, Monica Hăncianu¹



DOAJ
DIRECTORY OF OPEN ACCESS JOURNALS



Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L50> OP Vol.11, No.3, September 2020 p: L50

¹ “Grigore T. Popa” University of Medicine and Pharmacy, Faculty of Pharmacy, Iași, Romania

² “Grigore T. Popa” University of Medicine and Pharmacy, Faculty of Medicine, Iași, Romania

Abstract.

Essential oils, also known as volatile oils, have a series of uses in the food and cosmetic industries, being extensively used in aromatherapy as well. Among the most popular ones are those obtained from lavender (*Lavandula angustifolia*), bergamot (*Citrus aurantium* var. *bergamia*), eucalyptus (*Eucalyptus globulus*), frankincense (*Boswellia caterii*), tea tree (*Malaleuca alternifolia*) and peppermint (*Mentha piperita* var. *vulgaris*)¹. Depending on the content, form of presentation and intended use, essential oils are subjected to various European requirements. The main guideline regarding essential oils used in cosmetics for the European Union is the Regulation (EC) No 1223/2009 of The European Parliament and of The Council of 30 November 2009 on cosmetic products, which aims to ensure their high quality in order to protect the health and safety of consumers².

It is generally known that volatile oils present important antibacterial, antifungal and antiviral properties, given their high content in terpenoids. Other indication areas have been included, such as digestive, immune, nervous, vascular and respiratory systems³. Nevertheless, some essential oils possess an important sensitizing potential, therefore their correct use is vital⁴.

Essential oils can be administered through different routes such as inhalation or dermal application through massages. These two forms of administration used in the treatment of stress, anxiety or as to improve concentration and well-being represent the fundamentals of aromatherapy. The available scientific literature, as well as the traditional use of essential oils have suggested them to be helpful in diseases such as Alzheimer's, cancer and sleep disorders⁵. Through multiple and complex mechanisms involving the sense of smell, essential oils have a great impact on the limbic system and the entire brain. The role of such compounds is just beginning to be understood, but evidence so far suggests they could play an important part as complementary treatment in several neurological diseases⁶.

References

1. <https://www.cbi.eu/market-information/natural-ingredients-cosmetics/essential-oils-aromatherapy/>.
2. Barbieri C, Borsotto P. Essential Oils: Market and Legislation. In: *Potential of Essential Oils*. InTech; 2018.
3. https://www.cbi.eu/sites/default/files/market_information/researches/product-factsheet-europe-aromatherapy.pdf.
4. <https://www.edqm.eu/en/guidance-essential-oils-cosmetic-products>.
5. Ali B, Al-Wabel NA, Shams S, Ahamad A, Khan SA, Anwar F. Essential oils used in aromatherapy: A systemic review. *Asian Pac J Trop Biomed*. 2015;5(8):601-611.
6. Wang Z-J, Heinbockel T. Essential oils and their constituents targeting the GABAergic system and sodium channels as treatment of neurological diseases. *Molecules*. 2018; 23(5):1061.

L51 - MEASURING COMORBIDITIES IN STROKE REHABILITATION – IS INTERNATIONAL CLASIFICATION OF DISEASE ICD-10 A USEFUL TOOL?

A.Melnic^{1,2}, A. Staver¹, O. Pascal^{1,2}



Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L51> OP Vol.11. No.3, September 2020 p: L51

- 1- “Nicolae Testemitanu” State University of Medicine and Pharmacy, Department of Medical Rehabilitation, Physical Medicine and Manual Therapy, Chisinau, Republic of Moldova
- 2- Institute of Neurology and Neurosurgery “Diomid Gherman”, Chisinau, Republic of Moldova

Abstract.

Introduction. During post-stroke rehabilitation, medical specialists can report a wide range of comorbidities. Many healthcare providers use International Classification of Disease 10 (ICD 10) in order to monitor the occurrence of multiple conditions. Even though ICD 10 remains a common tool of monitoring the comorbidities, its application for post stroke rehabilitation remains unclear.

Purpose of the study. To determine whether the ICD 10 model is adequate for assessing comorbidity patterns of post stroke persons enrolled in rehabilitation.

Material and methods. Comorbidity profiles of 252 persons with stroke admitted to Neurological Rehabilitation department and frequencies of events according to recorded ICD-10 system was assessed.

Results: 81 different codes recorded according to ICD -10 (among them 32 codes single entries), were attributed to risk factors, complication and concomitant disease as groups of comorbidities. Diseases of the circulatory system (I00-I99) was in the top of comorbidities profiles counting 601 entries as follows: hypertensive heart failure - 154 cases, atrial fibrillation - 67 cases, carotid arteries occlusion 56 cases and others. Among the codes, representing risk factors, and concomitant disease were endocrine/ nutritional and metabolic diseases (E00-99) represented by diabetes – 77 cases, obesity - 37 cases. Functional deficits presented mainly by codes of hemiplegia (G81) - 140 cases and speech disorders (R47) in 119 cases. Mental/ behavior disorders (F00-99) or musculoskeletal diseases (M00-99) were another important groups of comorbidities that belong to complications. At the same time, it was difficult to present ICD-10 codes to a specific group of comorbidities. Combination of ICD-10 with functional classifications and comorbidity indexes can provide more clearness.

Conclusions: ICD-10 system offers important information upon comorbidities encountered within rehabilitation post stroke but its use remains challenging / with gaps in monitoring comorbidities.

Keywords: stroke rehabilitation, comorbidities, ICD-10

L52 - The Importance of Neuromotor Stimulation in Term Born Infants

Monica Adriana FARAGO¹, Manuela Simona POP¹

Corresponding author: Manuela Simona POP, E-mail: drpsimona@gmail.com



DOAJ
DIRECTORY OF
OPEN ACCESS
JOURNALS



Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L52> OP Vol.11, No.3, September 2020 p: L52

1. University of Oradea, Faculty of Medicine and Pharmacy, Romania

Abstract

Introduction. Infancy is a time of intense development. In the presence of touch and affection from their caregivers, they grow and thrive properly.

Aim of the study: to identify movement and motor skills delay in term infants and the proper rehabilitation interventions they need.

Materials and Methods. The subjects (n=28) were healthy outpatient infants born at term, between 6 and 12 months old, referred to the rehabilitation department for motor delay. They were evaluated for attention, emotional and motor skills in relation to the indicative scales of normal infants grow. Mothers interview included questions about the duration and structure of time spent with the infant and the level of stress and anxiety related to this task. Physiotherapeutic interventions: 10 sessions infant massage and exercises for postural control, movements coordination, mother's education.

Results. In the presence of normal growth, all subjects showed short eye contact, all motor skills reported to their age were delayed, low resistance to the first rehabilitation session which were correlated to mothers fear, anxiety and lack of information concerning the importance of motor and sensitive infants stimulation. Through mother's education and 10 sessions of physiotherapy (infant massage and exercise), infant attention, back control and resistance to exercise improved. Some of the mothers reported better sleep and mood in infants.

Conclusions. 1. In order to promote the bonding between baby and parent, the motor, sensitive and cognitive skills in infant, the basis for the development of a future balanced and healthy adult, early physiotherapy evaluation and interventions are needed.

2. Social and medical systems to support more efficient infants educational and physiotherapy interventions are needed.

Key words: *motor delay, neuromotor stimulation, physiotherapy.*

L53 - Impact of Mood and Cognition Disorders in Post Stroke Rehabilitation

A. Melnic^{1,2}, O. Pascal^{1,2}, S. Pleșca^{1,2}

Corresponding author A. Melnic, E-mail: adrian.melnic@usmf.md



Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L53> OP Vol.11. No.3, September 2020 p: L53

1. “Nicolae Testemitanu” State University of Medicine and Pharmacy, Department of Medical rehabilitation, physical medicine and manual therapy, Chisinau, Republic of Moldova
2. Institute of Neurology and Neurosurgery “Diomid Gherman”, Chisinau, Republic of Moldova

Abstract

Introduction. Cognitive and mood disorders after stroke are common comorbidities being associated with poor rehabilitation outcomes. At the same time, these conditions can overlap and cause low level of functioning in stroke patients.

The purpose of the study was to evaluate the incidence and distinctive profile of cognitive and mood disorders and its impact on rehabilitation outcomes.

Material and methods. Individuals (N=60) with stroke admitted in the department of Neurological Rehabilitation of the Institute of Neurology and Neurosurgery, Chisinau, Republic of Moldova were evaluated using Montreal Cognitive Assessment Scale (MoCA), The Hospital Anxiety and Depression Scale (HADS), and Barthel Index at admission and discharge.

Results. Cognitive dysfunction in post stroke rehab have been registered in 87 % (mild -27%, moderate -38 %, severe forms – 22 %) with average MoCA score of 17.18 points (SD± 7,4). The most affected area of cognitive function was visuospatial perception, memory and attention. Functional outcomes measured by difference of Barthel Index at admission and discharge are higher in persons with higher cognitive score (Pearson's $r = +0.65$). Anxiety and depression were present in 30 % and 35 % of study group having a mean score of 9.6 for anxiety (SD± 5,6) and 8.9 for depression (SD± 3,56) . A negative correlation between depression score vs anxiety score and functional outcomes were registered with a stronger statistical significance for depression (Pearson's $r = -0.59$ versus -0.31)

Conclusions. Cognitive intervention for training of visual perception, attention and memory can improve functional outcomes for post stroke rehabilitation. Cognitive and mood disorder occur frequently as comorbidities in stroke and have to be considered by the multidisciplinary team.

Key words: *cognitive disorders, anxiety, depression, post-stroke rehabilitation*

L54 - The Effects of Cupping Therapy in the Treatment of Lumbar Algal Syndrome

Victoria CHIHAI¹, Alisa TĂBÎRȚĂ¹, Svetlana PLEȘCA¹, Maxim LUPU¹

Corresponding author: Victoria CHIHAI, E-mail: victoria.chihai@usmf.md



Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L54> OP Vol.11, No.3, September 2020 p: L54

1. State University of Medicine and Pharmacy "Nicolae Testemitanu", Chisinau, Republic of Moldova, The Department of Medical Rehabilitation, Physical Medicine and Manual Therapy

Abstract

Introduction. Lumbar algal syndrome is defined as pain that persists over 12 weeks and is determined by degenerative or traumatic vertebral processes. Chronic back pain is the costliest benign health problem faced by patients in industrialized countries and one of the most common causes of limiting the activity of persons under 45 years of age. [2,4] The treatment of chronic back pain can be structured. In 3 phases depending on the duration of symptoms. From the first stage of the disease, physiotherapy with analgesic effect, myorelaxant, and anti-dementia is recommended, in combination or not with the drug treatment. [3,5] These treatment schemes may also be followed in the following stages of pathology.

Case presentation. Patient B.C. male, 44 years old, originally from the rural area, as a driver was admitted to the IMSP "State Hospital" (Chisinau), with accusations of pronounced lumbar pain, stinging and irradiation in the lower limb straight up to the knee level with acute exacerbation during the meal and prolonged orthostatism. From anamnesic: The patient is a smoker for 20 years, leads a sedentary lifestyle, lumbar pain for 6 years with exacerbations 2-3 times a year. Established diagnosis: Subacute Lombosciatica on the right of vertebrogenic origin, persistent moderate algal syndrome; static and walking disorders; obesity grade I. The value of the algal syndrome tested according to the VAS scale was evaluated by the patient with 9-10 points. Signs of elongation: The Lasague and Wassermann-Matskevich tests were positively appreciated on the right. Functional testing according to the Oswestry Disability Index Questionnaire [1] was scored by 4 points, finger-soil test = -23cm, Šober test = 10/12 cm. Quality of life was assessed by 56 points after the Short-Form Questionnaire [1].

Results. The patient received drug treatment and conventional rehabilitation therapy (kinetotherapy, electrotherapy) in combination with dry cupping therapy along the path of the lumbar paravertebral musculature. After 6 weeks from the beginning of the treatment the pain was noted with 2-3 points. The value of the Oswestry Disability Index Questionnaire reached 1 point. Lasague and Wassermann- Matskevich tests - negative bilateral, finger-sol test = -4cm, Šober test = 10/15 cm. The summary value of the quality of life indices increased to 89 points (Short-Form questionnaire).

Conclusions. The complex medical rehabilitation program associated with cupping therapy has greatly improved the functional status and quality of life of the person with lumbar algal syndrome. Cupping therapy can be a part of complex physio-functional rehabilitation programs.

Key words: *lumbar algal syndrome, quality of life, cupping therapy*

References

1. Durerea Lombară la adult. <http://crdm.md/images/ups/protocol/pdf.2013>
2. <http://www.cnaa.md/files/theses/2019/55228/florentina cristea thesis.pdf>
3. <https://www.ncbi.nlm.nih.gov/pubmed/29436369>
4. <https://www.ncbi.nlm.nih.gov/pubmed/31949534>
5. <http://89.32.227.76/files/14507-PCN-Durerea%2520lombar%25C4%2583.pdf>

L55 - Using Robot-Assisted Therapy in Children' Pathology

Liliana PĂDURE^{1,2}, Corina SPOREA², Andrada MIREA^{1,2}

Corresponding author: Corina SPOREA, E-mail: corina.sporea@gmail.com

1. University of Medicine and Pharmacy "Carol Davila", Bucharest, Romania
2. National Teaching Centre for Children Neurorehabilitation "Dr. Nicolae Robanescu", Bucharest, Romania

Abstract

Introduction. Modern therapy devices – Gloreha, Pablo, Myro, Armeo, Armotion, Diego – are nowadays used to assess and train paralyzed upper limb.

Materials and Methods. We studied the evolution of more than 150 patients admitted to our hospital, which received, besides the conventional physical therapy, the indication of robot-assisted therapy using upper limb rehabilitation devices Gloreha, Pablo, Myro, Armeo, Armotion and Diego, which combines robotic rehabilitation therapy with virtual reality facilities.

Results. Robot-assisted therapy enchants the child by interacting with image and sounds and coopting him into a beneficial activity with faster and better results on his health condition.

Conclusions. Computerized assessment and therapy facilitate rehabilitation of all types of paralysis of the upper limbs, both spastic and flaccid. State-of-the-art robot-assisted devices' facilities combined with virtual reality elements has proven to have enhanced results in motor and cognitive children rehabilitation.

Key words: *pediatric rehabilitation, children rehabilitation, upper limb rehabilitation, hand rehabilitation, robot-assisted therapy*

L56 - Rehabilitation Challenges in a Patient with Stroke and Advanced Coxarthrosis

Dănuț PĂCURAR^{1,2}, Mihaela Ramona PĂCURAR^{1,2}

Corresponding author: Dănuț PĂCURAR, E-mail: icu_dan@yahoo.com



DOAJ
DIRECTORY OF
OPEN ACCESS
JOURNALS



Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L56> OP Vol.11, No.3, September 2020 p: L56

1. University of Oradea, Faculty of Medicine and Pharmacy, Oradea, Romania
2. Carei County Hospital

Abstract

Introduction. Stroke and degenerative osteoarthritis are frequently associated in adults at a certain age. Both conditions are debilitating and reduce considerably the patient life expectancy. The diagnosis of degenerative osteoarthritis is based on clinical findings and X-ray characteristics. According to World Heart Organization there are no significant differences between male and female patients.

Material and methods. We report the case of a 73 years old female patient known with ischemic left pontine stroke and grade 2 bilateral coxarthrosis, associated with systemic arterial hypertension and type 2 diabetes mellitus insulin dependent. Her symptoms on admission were walking deficit, right limbs motor impairment, right shoulder stiffness and knee and hip pain.

Results. At presentation: BMI=32, BP= 120/70 mmHg, HR= 68 bp, ECG: sinus rhythm, minimal diffuse ischemic changes. Musculoskeletal system revealed: Asworth scale=2 in the right limbs, right deep tendon hyperreflexia, skeletal muscle force in the right upper limb= 1/5 right lower limb= 4-/5, right prehension deficit, right shoulder subluxation grade 2/3, Babinski sign (+) on the right, positive left test Patrick, left limited rotation in femoral neck in all axes, right spastic walk, Barthel index= 40. Lab work: nonspecific inflammatory syndrome, otherwise unremarkable. X-ray pointed out advanced coxarthrosis on the left. The patient was informed about her actual status and we explained her options at this point. She fervently refused the surgical procedure for hip replacement and expressed her wish for conservatory treatment. The rehabilitation adapted program for her status was antalgic electrotherapy, neuromuscular stimulation, occupational therapy, exercise therapy and application of orthosis.

Conclusions. This was a difficult case by all the means: elderly patient weakly motivated, advanced multiple comorbidities and express refusal of certain procedures.

The physical rehabilitation and applied medication of such patients require social, economic, medical and family support which may lead to some improvement in their quality of life and emotional/ cognitive status.

L57 - Rehabilitation Limitations and Approaches in Obese Patients

Mihaela Ramona PĂCURAR^{1,2}, Dănuț PĂCURAR^{1,2}

Corresponding author: Dănuț PĂCURAR, E-mail: icu_dan@yahoo.com



DOAJ
DIRECTORY OF
OPEN ACCESS
JOURNALS



Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L57> OP Vol.11. No.3, September 2020 p: L57

1. University of Oradea, Faculty of Medicine and Pharmacy, Oradea, Romania
2. Carei County Hospital

Abstract

Introduction. Obesity is defined by World Health Organization as an excessive fat accumulation that presents a risk factor to health. A patient with a BMI of 30 or more is generally considered obese. Obesity is in fact a disease of epidemic proportions and a major concern worldwide.

Material and methods. We present the case of a 52 years old male patient known with surgical intervention (vertebroplasty with acrylic cement) for post-traumatic eight dorsal vertebra fracture. He was hospitalized in our department for: chronic intense pain in cervico-dorso-lumbar spine with radiculopathy and poorly controlled systemic arterial hypertension.

Results. On admission: BMI= 41, BP= 150/90 mmHg (on chronic BP lowering drugs), HR= 92 bpm, SO₂= 97%. Clinical findings were rhythmic heart sounds with no murmurs and no crackles, mild kyphoscoliosis, painful lumbar flexion, dorso-lumbar paravertebral muscular contraction and hypersensitivity percussion and cervical limited motion in all axes. Lab work: hyperuricemia and moderate dyslipidemia. ECG and transthoracic echocardiography revealed hypertensive heart profile. MRI confirmed the above-mentioned diagnosis, without other pathological findings. We adjusted his BP treatment and carefully monitor BP fluctuation and then start the rehabilitation program. Every session of rehabilitation therapy began with psychological counseling to highlight the importance of obesity in his comorbidities and the impact on medium- and long-term prognosis. After 2 years his clinical status significantly improved: he is very active, with only mild spinal pain, BMI is 30.2, BP is normal without antihypertensive medication, uric acid is within normal ranges with mild hypertriglyceridemia.

Conclusions. Evidence based medicine on how to rehabilitate obese patients is weak. At the moment there are no specific guidelines for rehabilitating patients with obesity and comorbidities so further comparative trials are needed.

L58 - Physiotherapeutical treatment used in the rehabilitation of polymyositis

Rucsandra Nedelcu¹, Catalin Ionite^{1*}, Iustina Condurache¹, Mariana Rotariu¹

Corresponding author: Catalin Ionite: catalin.ionite@yahoo.com

¹University of Medicine and Pharmacy „Grigore T. Popa”, Street University, No. 16, Iași, România

Abstract.

Introduction

Polymyositis is described in speciality literature as an inflammatory disease that causes generalised muscle weakness, making it difficult or impossible to climb stairs, rise from a seated position, lift objects or even stand for a long time. This disease most commonly affects adults in their 30s, 40s or 50s, women being affected more often than men, and signs and symptoms usually develop gradually, over weeks or months.

Materials and method

This study included a group of 15 subjects, diagnosed with polymyositis by a specialist. The group went through two evaluations, an initial one, before the rehabilitation protocol was applied, and a final one.

The study lasted for a period of six weeks, from January 2020 to March 2020. During that period, each patient received four treatment sessions per week, reaching a total of 24 sessions.

Each session focused on a combined therapeutical protocol that included massage (effleurage, tapotement), electrotherapy (Trabert, TENS, [interferential current](#)) and physiotherapy (exercises for muscle relaxation, passive and active mobilisation and neuromuscular facilitation techniques).

Results

According to the results obtained from subsequent evaluations (initial and final), and afterwards compared, a significant improvement in muscle tone was obtained, a parameter directly proportional to the muscular strength of the patients, which also registered an increase. The increase of the two parameters led to the improvement of the patient's functionality in performing daily activities for a longer period of time.

Conclusion

The results obtained and compared with each other, suggest that the treatment protocol designed and applied in the rehabilitation of patients diagnosed with polymyositis, had positive effects, increasing muscle tone and muscle strength, restoring the patient's functionality, including his autonomy.

Key words: polymyositis, rehabilitation protocol, functionality.

L59 – Clinical-Imagistic and Recuperative Features in a Young Patient who is Traumatized by Road Accident- With Vegetative State and Evolution Towards a State of Minimum Consciousness at 6 months after the accident

Simona-Isabelle STOICA^{1,2}, Carmen Elena CHIPARUS², Magdalena Vasilica LAPADAT², Iulia- Maria NOHA², Andreea DUMITRASCU², Ioana ANDONE^{1,2}, Gelu ONOSE^{1,2}

Corresponding author: Simona-Isabelle STOICA, E-mail: stoicasimonaisabelle@yahoo.com

1. University of Medicine and Pharmacy “Carol Davila” (UMPCD), Bucharest, Romania
- 2 Teaching Emergency Hospital “Bagdasar-Arseni” (TEHBA), Bucharest, Romania

Abstract

Introduction. The frequency of road accidents is increasing due to technological progress and unpredictable elements (state of the roads, individual factors, and so on). And the individual consequences can be very severe.

Materials and Methods. With the permission of the TEBA Ethics Committee (no 3159/ 30.01.2019), we will present an interesting case of a young patient who suffered a severe head injury after a road accident. We will talk about the evolution of clinical, paraclinical and functional parameters. We will also highlight the diagnostic and therapeutic features encountered in this case.

Results. Despite the unfavorable clinical and functional prognosis and the multiple post-traumatic complications that occurred, the patient survived and evolved to better psycho-cognitive and functional states.

Conclusions. Road accidents represent a real social problem through individual, family and professional consequences. In this context, primary and secondary preventive education of the population, as well as the promotion of neuro-muscular recovery programs are essential.

L60 - Favorable Evolution in a Case of Right Hemiplegia and CFP with Medium to Severe Crural Motor Deficiency and Predominantly Mixed Expressive Aphasia, After a Voluminous Profound Intraparenchymatous Hematoma Located In The Left Temporal Lobe, Which Was Surgically Removed.

Alexandru G. STAVRICĂ², Mihaela MANDU², Cristina POPESCU², Gelu ONOSE^{1,2}

Corresponding author: Alexandru G. STAVRICĂ, E-mail: alexandru.stavrica@gmail.com

1. "Carol Davila" University of Medicine and Pharmacy, Bucharest, Romania
2. Neurorehabilitation Clinic, Teaching Emergency Hospital "Bagdasar Arseni" (TEHBA) Bucharest, Romania

Abstract

Introduction. An intra-parenchymatous hemorrhage is a blood accumulation that occurs in the cerebral parenchyma, most commonly situated in the temporal or parietal lobe, but can occur at any level of the cerebral hemispheres.

The mechanism of formation of a hematoma is represented by the rupture of a blood vessel, which can be produced by multiple factors, the most known being CBT, hemorrhagic stroke or cerebrovascular malformations.

The neurological manifestations may develop suddenly or slowly (within a few days). These depend on the location of the hematoma and can affect speaking, sensitivity, mobility or even the mental condition.

The evolution of the patient depends firstly on the location and the volume of the hematoma, but, of course, also on age or other associated diseases. It may spontaneously recovery or may require neurosurgical intervention.

Case presentation. 30 years old male patient with right hemiplegia and CFP - with medium-severe crural deficit and mixed aphasia, predominantly expressive, after deep, voluminous left intraparenchymatous hematoma (operated on 27.11.2019 - evacuation and left frontal-temporal decompression with flap). Neurogenic bladder - carrier of indwelling urinary catheter. UTI etiologically treated. Secondary HBP, was admitted to the Neuromuscular Recovery Clinic of the Emergency Clinical Hospital "Bagdasar-Arseni" (TEHBA) for right hemiplegia motor deficit, right CFP, severe locomotor and auto-care dysfunctions, retention sphincter disorders (neurogenic bladder) and specialized recovery and nursing treatment, with favorable evolution.

Discussions. The peculiarity of this case consists in the good evolution of a patient with voluminous temporal hematoma and, especially, the means of production of the hematoma, given the young age of the patient, the problem of a cerebrovascular malformation is raised.

Keywords: *hematoma, hemiplegia, decompressive flap, recovery*

L61 - Neuroped-Rehab – A New Platform for Children and Youth with Acquired Brain Injury

Maria Veronica MORCOV¹, Liliana PADURE^{1,2}, Corina SPOREA¹

Corresponding author: Corina SPOREA, E-mail: corina.sporea@gmail.com



1. National University Hospital for Children Neurorehabilitation “Dr. Nicolae Robanescu”, Bucharest, Romania
2. University of Medicine and Pharmacy “Carol Davila”, Bucharest, Romania

Abstract

Introduction. Acquired brain injury (ABI) is a brain injury that occurs in a child who previously had a normal development.

ABI most frequently includes head injury (from mild to severe), brain tumors, and strokes. Other causes are infectious (meningoencephalitis, meningitis), anoxic (cardiac arrest, drowning, hypoxia of various origins), autoimmune or inflammatory. Traumatic brain injuries, part of ABI, are a major public health problem and are the main cause of death and disability in children and adolescents.

Materials and methods. Since 2017, 5 European partners from Romania, France (2) and Denmark (2) met and shared their experiences in a interdisciplinary cooperation in rehabilitation of children and youth with ABI. They wanted to share their expertise and to offer, in an innovative way, common clinical practices applicable as directly as possible in the hospital and after discharge, in the continuous development phase.

Results. As a result of their joint efforts, they developed a guideline for best practices in rehabilitation of children and youth with ABI (that contains 24 standard procedures for rehabilitation) and an e-Learning platform.

Conclusions. The e-Learning platform and the guidelines for modern interdisciplinary rehabilitation practices for children and youth with acquired brain injury turned out to be useful tools for professionals working in the field of pediatric neurology, neuro-physiology and neuro-pedagogical rehabilitation of children and young people: residents or specialists in rehabilitation, physical therapists, psychologists, occupational therapists, speech therapists, orthoptists.

Keywords: *acquired brain injury, pediatric rehabilitation, e-Learning, best practices, guidelines*

L62 - Favorable evolution on functional key components but with multiple remaining phatological elements in a patient diagnosed with toraco-lombar SCI - Case report -

Irina Raluca PETCU³, Florin DELCEA³, Dumitru Cristinel BADIU^{1,2}, Mihaela MANDU²,
Gelu ONOSE^{1,2}

Corresponding author: Irina Raluca PETCU, E-mail: varsa_raluca@yahoo.com

1. University of Medicine and Pharmacy Carol Davila (UMPCD), Bucharest, Romania,
2. Teaching Emergency Hospital Bagdasar Arseni (THEBA), Bucharest, Romania.
3. Municipal Hospital of Turnu Magurele, County-Teleorman, Romania.

Abstract

Introduction: This paper presents an extremely complex case: paraplegia with T11 neurological level post-thoracic lumbar TVM with T12 commutative fracture by falling from about 2 meters (operated 17.02.2020), currently having a motor deficit AIS / Frankel C with multiple complications and successive worsening, as well as the approach of its therapeutically-rehabilitation management, respectively.

Materials and methods: 41-year-old male patient admitted in our Clinic s Division for motor deficiency of paraplegia type immediate postoperative Frankel C- currently AIS / Frankel D, superficial sensitivity disorders with T11 level. The patient was clinical and functionally evaluated, according to the standard implemented protocols of our Unit, through the following measurement evaluation scales: AIS, FIM, QQL (Quality of life), Ashworth, Penn, FAC, WISCI II, and investigate paraclinical). During the admission, the patient has numerous aggravations and complications such as; urinary tract infection with E. Coli; left epididymo-orchities; all of which aggravate / delay, the therapist-recovery procedures / results.

Results: Following optimal treatment including pharmacological, and complex neuro-rehabilitation program the patient had a favorable evolution with increased values of the measurement scales (motor AIS with 13 points, FIM motor with 5 points, QQL with 9 points, and FAC with 1 point);incomplet remission of bladder and neurogenic bowel dysfunction (intermittent the urinary catheter); increased muscle strenght with improved walking speed and balance.

Conclusion : The recovery of patients with spine-cord injury is a complex process,which requiers taking into account all associated pathologies that can play a decisive role in the evolution of the patient. A multidisciplinary team is required for such purposes

Keywords: *spine-cord injury, poly-pathologic, rehabilitation*

L63 - Case Report: Neuromuscular Successful Rehabilitation Approach in a Case of a Surgically Removed Cervical Ganglioneuroma with Favorable Outcome Results

Mihai BĂILĂ, Cristina Octaviana DAIA^{1,2}, Daniel ȘERBAN², Ioana ANDONE^{1,2}, Cristian RADUCANU², Mihalea MĂNESCU², Gelu ONOSE^{1,2}

Corresponding author: Mihai BĂILĂ, E-mail: baila_mihai@yahoo.com

Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L63> OP Vol.11, No.3, September 2020 p: L63

1. University of Medicine and Pharmacy Carol Davila (UMPCD), Bucharest, Romania,
2. Teaching Emergency Hospital Bagdasar Arseni (THEBA), Bucharest, Romania.

Abstract

Introduction. Neural crest cell tumors are rare tumors with a dense nomenclature. In this family of tumors are included tumors derived from sympathoadrenal (SA) cells. The Ganglioneuroma (GN) is considered to be a benign tumor of the SA.

Material and methods. In this report we describe the case of a 52-year-old male with a spinal cord compression syndrome caused by a left cervical (C1-C2) ganglioneuroma (GN), resulting in spastic tetraplegia, Brown-Sequard syndrome, mild restrictive ventilatory impairment, neurogenic bladder and gut. The tumoral process has been surgically removed and the patient followed a splitted rehabilitation program for almost 4 months, benefiting in this time from rehabilitation nursing, a physical therapy program and medical therapy.

Five assessment scales were registered on the hospitalization admission and on discharge and served for the quantitative analysis of the patient's neuro-myo-arthro-kinetic status: FIM (Functional Independence Measure), FAC (Functional Ambulation Categories), ASIA impairment scale, modified Ashworth scale, Penn scale, Barthel Index for Activities of Daily Living. This study has approval of the Ethics Commission of the Teaching Emergency Hospital „Bagdasar-Arseni”, nr 3159 of 30.01.2020.

Results. The rehabilitation program improved the patient's muscle strength and muscle control, with supplementary increase of muscle tone. The bladder and bowel continence were regained. The patient has a persistent right hemianesthesia. The scales that quantify the clinical status and the autonomy of the patient improved significantly.

Conclusions. Ganglioneuromas most frequently have a benign evolution and usually occur in children. Tumors with the origin in the paravertebral sympathetic ganglia are most often found incidentally. The treatment of ganglioneuroma is surgical excision and post-operative monitoring of the disease progression. In this case of ganglioneuroma with cervical localization occurring at adult age, the patient has a consistent favorable neuromuscular recovery following complete surgery.

L64 - PREVENTION OF LUMBAR DISC HERNIATION IN YOUNG ADULT POPULATION – COLLECTING DATA FOR THE AWARENESS CAMPAIGN

Doroteea Teoibas-Serban¹, Liviu Iordache¹, Valentin Stan², Dan Blendea^{1,3}

Corresponding author: **Doroteea Teoibas-Serban:** doroteeateoibas@yahoo.com



DOAJ
DIRECTORY OF
OPEN ACCESS
JOURNALS



Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L64> OP Vol.11, No.3, September 2020 p: L64

1. Clinical Regional Emergency Hospital Ilfov Bucharest, Romania
3. University of Medicine "Titu Maiorescu" Bucharest, Romania

Abstract.

Introduction: Our previous paper discussed the increasing number of young adult population with lumbar disc herniation in the past few years. Most of the patients who seek medical attendance are young healthy male adults. They workout at the gym for a variety of reasons such as weight loss, muscle toning and increasing muscle mass. They are either unaware of the risk that certain exercises involve, or they wish to get faster results, obtaining the opposite effects. Thus, many of them develop lumbar disc herniation at a young age and must maintain certain restraints in order to stop it from evolving or reoccurring. The ideal solution is to increase awareness at the already numerous young male population who frequents the gym to prevent disc herniation.

Materials and Methods: The next step for our awareness campaign is to collect data directly from the source. A carefully created questionnaire with specific questions related to general knowledge, way of training and individual research on the topic was given to young adult males in many gyms from Bucharest. The questionnaire was completely anonymous and targeted young adult males which had to respond truthfully and give away only their age.

Results: The statistics show that most of the responders to the questionnaire did know about lumbar disc herniation and the risk involved in exercises such as weightlifting but did not possess the proper knowledge of how to do certain movements in order to prevent it.

Conclusion: The data collected showed that most of the young male adults which frequent the gym are not fully prepared with enough knowledge in order to do certain exercises without risking lumbar disk herniation. We must continue our campaign of awareness in this category of population in order to reduce the number of young patients with this disease.

L65 - Neurofilaments - Biomarkers in Severity Assessment and Evolution of Pediatric Patients with Spinal Amyotrophy

M. BADINA¹, A. MIREA^{1,2}, M. BEJAN¹, S. SHELBY¹, M. AXENTE¹, M.C. LEANCA¹,
L. PADURE^{1,2}

Corresponding author: M. BADINA Email: mihaela.badina@yahoo.com

1. National University Hospital for Children Neurorehabilitation "Dr. Nicolae Robanescu", Bucharest, Romania
2. University of Medicine and Pharmacy "Carol Davila", Bucharest, Romania

Abstract

Introduction. Neurofilaments are structural components of the neuronal cytoskeleton, found only at this level, that, in case of perikaryal/ axonal lesions, are released into extracellular fluid and can be detected in blood and cerebrospinal fluid. Affecting the integrity of neurons within different pathologies, the level of neurofilaments correlates directly proportional to the degree of injury. Spinal amyotrophy is characterized by muscle atrophy due to loss of motor neurons as a result of inefficient and insufficient synthesis of the survival motor neuron (SMN) protein, involved in the regulation of transcription, regeneration of telomerases and cellular active transport.

Materials and methods. We performed a literature study of published reports by different clinical trials on neurofilaments level in blood and CSF in different disorders that evolve with neuronal lesions and the correlation of this level with evolution and response to treatment.

We included in our literature review only ISI Thomson articles and clinical trials published reports on neurofilaments in neurologic diseases from the last decade.

Results. Increased amounts of neurofilaments appear in the CSF and blood in various diseases characterized by neuronal damage and degeneration, and the degree of neuronal damage correlates with the plasma and spinal levels of these proteins.

Conclusions. The level of neurofilaments can be an important disease evolution indicator, showing the response to treatment in pediatric patients with spinal amyotrophy, too.

L66 - NEW THERAPIES IN SPINAL MUSCULAR ATROPHY

A. MIREA^{1,2}, S.SHELBY², MC. LEANCA², L. PADURE^{1,2}, G. ONOSE^{1,3}

1. University of Medicine and Pharmacy "Carol Davila", Bucharest, Romania

2. National University Hospital for Children Neurorehabilitation "Dr. Nicolae Robanescu", Bucharest, Romania

3. Teaching Emergency Hospital "Bagdasar-Arseni"

Abstract.

Introduction. Spinal muscular atrophy (AMS) affects motor neurons in the anterior medullary horn, with consequent loss of muscle mass and the installation of motor deficiency. Most cases are caused by the homozygous deletion of exon 7 of the SMN1 gene, but there are other bialelelic mutations in this gene that may be responsible for this disease. (1) At present, in Romania, only one substance - Nursinersen - is approved for its treatment. SMN2 gene is paralogous to SMN1 (2) and differs from it by several nucleotides including CT substitution at position 6 of exon 7 (3,4,5,6), which interferes with a splicing enhancer in exon 7 (ESE) (1). Along with a splicing of the intron 7 template called ISS-N1, disruption of this ESE results in the removal of exon 7 during the splicing process in most transcripts, resulting in an incomplete, non-functional SMN protein - $\Delta 7$ SMN2. (1,3,4,5,6)

Nursinersen acts on the mechanisms of pre-messenger RNA, shading by hybridization with ISS-N1 and competition with the splicing factor hnRNPA1, which recognizes ISS-N1, thus increasing the level of complete SMN2 transcripts and thus the total level of SMN protein. (1,6)

In the United States, a second drug - Onasemnogene abeparvovec (Zolgensma) - is recommended for all patients with AMS up to 2 years of age. It is the associated adenovirus (AAV9) that contains SMN1 transgene and has the ability to cross the blood-brain barrier and can be systemically administered. (7)

In addition, for the substance in phase 3 clinical trials - Risdiplam - there is documentation submitted for approval to be marketed at European level. Risdiplam is a small molecule, which is administered orally and distributed in the central nervous system and peripheral organs. (8) This compound blocks the interaction with the MDR1 transport protein (human multidrug resistance protein) and prevents splicing of exon 7 of the SMN2 gene, increasing the amount of complete SMN protein. (9) There are, therefore, 3 substances, disease modifiers in the case of AMS pathology, with each one regarding the administration (intrathecal, intravenous and per os).

Material and Methods. We conducted a literature study of published results of phase 3 clinical trials for each of the three substances mentioned above.

Results. None of three substances presented above heals. They only stop disease' evolution and, depending on the time of initiation of the therapy, can generate the recovery of the motor function to a lesser or greater extent.

Conclusions. Initiation of drug therapy in SMA should be performed as soon as possible after the diagnosis is confirmed. Ideally, patients should be treated symptomatically.

1. Briefing Document to the Clinical Trial Readiness in Spinal Muscular Atrophy (SMA) SMA Europe, TREAT-NMD and European Medicines Agency meeting November 11, 2016, EMA, London, UK
2. Tosolini AP, Smith GM. Gene Therapy for the Central and Peripheral Nervous System. Frontiers Media SA. ISBN: 978-2-88945-475-4, ISSN: 1664-9714.
3. Wurster CD, Ludolph AC. Nursinersen for spinal muscular atrophy. Ther Adv Neurol Disord. 2018. 11: 1756285618754459
4. Singh NK, Singh NN, Singh RN. Splicing of a Critical Exon of Human Survival Motor Neuron Is Regulated by a Unique Silencer Located in the Last Intron. Mol Cell Biol. 2006. 26(4): 1333-1346.
5. Singh NN, Androphy EJ, Singh RN. The regulation and regulatory activities of alternative splicing of the SMN gene. Crit Rev Eukaryot Gene Expr. 2004. 14(4): 271-85
6. Ju-Jin Qu, Jin-li Bai, Fang Song. A rare variant (c.863G>T) in exon 7 of SMN1 disrupts mRNA splicing and is responsible for spinal muscular atrophy. 2016. 24(6):864-70.
7. Armbruster N, Lottanzi A, Buj-Bello A. Efficacy and biodistribution analysis of intracerebroventricular administration of an optimized AAV9-SMN1 vector in a mouse model of spinal muscular atrophy. Mol Ther Methods Clin Dev. 2016. 3:16060.
8. Poirer A, Weetall M, Heinig K, Bucheli F, Schoenlein K, Alsenz J, Bassett S, Ullah M, Senn C, Ratni H, Nanyshkin N, Paushkin S, Mueller L. Risdiplam distributes and increases SMN protein in both the CNS and peripheral organs. Pharmacol Res Perspect. 2018. 6(6): e00447.
9. Chiriboga CA. Risdiplam – SMN2 splicing modulator, treatment of spinal muscular atrophy. Drugs Fut 2019. 44(8): 643.

L67 - Proprioceptive Focal Vibratory Stimulation in Vegetative State Bedridden Pediatric Patients after Traumatic Brain Injury

Andra PINTILIE¹, Liliana PĂDURE¹

Corresponding author: Andra PINTILIE, E-mail: andra.pintilie@gmail.com

1 Pediatric Neuro-psycho-motor Rehabilitation National Teaching Centre “Dr. N. Robanescu”

Abstract

Introduction. Traumatic Brain Injury (TBI) is defined as an alteration in brain function as a result of an external force either involving impact to the head (traumatic impact) or inertial forces (traumatic inertial).

Severe TBI is a heterogeneous group of symptoms compiled of motor impairment to cognitive, speaking, memory, focus, behavioral alternations.

Materials and Methods. Our interest was to observe the evolution of consciousness, responsiveness and awareness in a TBI patient with vegetative state, using proprioceptive focal vibratory stimulation (PFVS).

We present the case of a 15 y.o. female patient with TBI following a height fall (over 15 m) a month prior to admission to our rehabilitation unit.

The physical examination discloses a vegetative state, with motor impairment to all four limbs, accompanied by high intensity spasticity and contractures, bladder and bowel incontinence, with vital signs in normal ranges.

She was prescribed a complex neurorehabilitation program, including physical therapy for maintaining and improving ROM, spasticity decrement, neurosensory stimulation and robotic controlled standing training. PFVS was applied to all four limbs, in order to stimulate proprioception, neuroplasticity, maintain and reestablish neurological gateways, for a duration of 20 minutes per day, during several hospital admissions.

Results. Although still bedridden with severe neurological impairment, an improvement in patient's vegetative state was noticed, evolving to minimal conscious state.

Conclusions. Regarding the apparent small achievement, PFVS is applied to each TBI patient in our neurorehabilitation unit, in order to observe and assess the consciousness' state evolution.

L68 - Lung Ventilation Monitoring in Patients with Spinal Amiotropy Type

A.MIREA^{1,2}, MC. LEANCA², FP. GRIGORAS², L.PADURE^{1,2}, G.ONOSE^{1,3}

Corresponding author: Andrada MIREA, E-mail: andrada.mirea@gmail.com



DOAJ
DIRECTORY OF
OPEN ACCESS
JOURNALS



Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L68> OP Vol.11, No.3, September 2020 p: L68

1. University of Medicine and Pharmacy "Carol Davila", Bucharest, Romania
2. National University Hospital for Children Neurorehabilitation "Dr. Nicolae Robanescu", Bucharest, Romania
3. Teaching Emergency Hospital "Bagdasar-Arseni"

Abstract

Introduction. Spinal Muscular Atrophy (SMA), affects motor neurons in the anterior medullary horn, often those in the brainstem, leading in time to their apoptosis and muscle loss(1). Because of breathing involved muscles impairment, pulmonary ventilation is also affected patients with type I SMA requiring non-invasive bi-level positive pressure ventilation (BIPAP) (2).

Material and Methods. 12 patients with type I were evaluated: 7 girls and 5 boys. Of these, 8 (4 girls and 4 boys) received BIPAP indication and used it appropriately. Of these, 1 patient is ventilated on the tracheostoma. CO₂ levels were monitored with transcutaneous sensor (with / without non-invasive ventilation) and evolution of thoracic circumference was compared to cranial perimeter during a minimum of 9 months. Different ventilation pressures were used, depending on the needs of each patient (evaluated by capnograph titration), but all were aimed at maintaining a CO₂ level between 30-40 mm Hg, without exceeding 10 mm Hg between the measured CO₂ values in sleep and watch.

Results. Patients showed a corresponding increase in the thoracic circumference, related to both the cranial perimeter and the normal value for age.

In addition, chest development in noninvasively ventilated patients was similar to those that did not require ventilation.

Conclusions. The correct use of non-invasive ventilation offers the possibility of adequate lung expansion and development of a corresponding thorax volume.

References

- 1.Mercuri, E., Finkel, R. S., Muntoni, F., Wirth, B., Montes, J., Main, M., ... & Bertini, E. (2018). Diagnosis and management of spinal muscular atrophy: part 1: recommendations for diagnosis, rehabilitation, orthopedic and nutritional care. *Neuromuscular Disorders*, 28(2), 103-115
- 2.<https://www.curesma.org/wp-content/uploads/2019/07/breathing-basics.pdf>

L69 – Current Aspects Regarding “Smart Homes”/ Ambient Assisted Living (AAL) Including Afferent Instrumental Activities of Daily Living (IADL) Specific Devices, for People with Disabilities/ Special Needs

Ioana ANDONE¹, Aura SPÎNU¹, Cristina POPESCU¹, Simona STOICA¹, Liliana ONOSE³, Gelu ONOSE^{1,2}

Corresponding author: Ioana ANDONE, E-mail: ioanaandone11@yahoo.com

1. The Teaching Emergency Hospital “Bagdasar-Arseni” (TEHBA), Bucharest, Romania
2. The University of Medicine and Pharmacy “Carol Davila” (UMPCD), Bucharest, Romania
3. The Medical Service of Metrorex SA, Bucharest, Romania

Abstract

Introduction. The population life expectancy has increased (“over half the EU’s population predicted to be over-65 by 2070”), according to recent prevalence studies, being a result of the advancement of technology and medical science. This ageing population has implications on the society, because there is increased number of older people requiring better quality of life.

Materials and Methods. AAL represents the systems that may support completely the living area of a person and has the potential to facilitate the elderly to live longer and more safety in their family environments, allowing them to continue their current activities, facilitating participation in more activities at home and in the community and improving the cost-effectiveness and quality of health and social services. A practical use of technology is the introduction of home networks, which involve notions such as: “smart homes”, “tele-health / tele-care” and even, possibly, “tele-medicine” to allow people with serious illnesses / conditions / and special needs to maintain an appropriate quality of life (QOL) at home.

Discussions and Conclusions: AAL can contribute to an increased autonomy, self-confidence, and mobility in people whose activity is limited to home environment, such as “the oldest olds” and/ or those with severe neuro-/ loco-motors disabilities, and so to reduce the risk of institutionalization, enhance security, prevent social isolation, thus allowing “older adults to age in place”. An important role in achieving this goal is representing by working in a multidisciplinary team (experts in the field of health - rehabilitation, gerontology -, social experts, technical/ informatics experts, engineering and robotics experts).

Key words: *ambient assistive living, quality of life, special needs, tele-medicine*

Selected bibliography:

1. <http://www.aal-europe.eu/about/>
2. Edge M, Taylor B, Dewsbury G & Groves M (2000) 'The potential for 'smart home' systems in meeting the care needs of older people with disabilities, Seniors' Housing Update, Gerontology Research Centre, Canada, Vol10, Number 1, August 2000, pp:6-7, ISSN: 118-1828

L70 - Complex Clinical, Paraclinical and Neurological Rehabilitation Approach of a Patient with Confusional Psycho-Cognitive Status After A Ruptured Posterior Communicating Artery Aneurysm, with Fronto-Parietal Bone Flap and Internal Hydrocephalus

George PĂTRAȘCU¹, Ali Osman SAGLAM¹, Laura POPESCU¹, Luminița Nirli¹,
Ana Carmen REBEDEA¹, Alexandra SPORICI¹, Gelu ONOSE^{1,2}

Corresponding author: George PĂTRAȘCU, E-mail: george.ptr.93@gmail.com

1. Teaching Emergency Hospital „Bagdasar-Arseni” Bucharest (TEHBA)
2. University of Medicine and Pharmacy “Carol Davila” in Bucharest, Romania

Abstract

Introduction. Cerebral aneurysm is a cerebrovascular disease where the weakness of the arterial wall produces abnormal dilatations of it. The cause could be congenital, determined by infections (mycotic aneurysm), or determined by vascular modifications in arterial hypertension. The most frequent location of the aneurysms is in the circle of Willis. The patient with ruptured aneurysm needs neurological rehabilitation on long term, physical therapy, occupational therapy and re-education of speech.

Materials and methods. This paper presents a case of a 41 year old patient known with history of lumbar polydiscopathy and cervical discopathy, who suffered an aneurysm rupture of the posterior communicating artery complicated with subarachnoid hemorrhage Hunt and Hess III, internal hydrocephalus, cerebral vasospasm, intracranial hypertension syndrome, sphincter incontinence, locomotor dysfunction and confusional psycho-cognitive status.

The patient was initially admitted in the Neurosurgical department of National Institute of Neurology and Neurovascular diseases, where, after clinical and paraclinical evaluation, the above diagnostic was established and surgical intervention was performed, practicing aneurysm clipping, fronto-parietal bone flap and unishunt ventricular drain.

In our clinic, the patient followed an adequate medical and physical treatment. The patient was functionally assessed using the following scales: Glasgow Outcome Scale, Mini-Mental State Examination, Montreal Cognitive Assessment, Modified Rankin Scale, Modified Ashworth, Functional Independence Measure, FAC International Scale, Quality of Life Assessment.

Results. The complex neurological rehabilitation and nursing treatment, together with medical treatment, psychiatric and psychological evaluation and counseling, led to a favorable evolution, the patient being to walk on relatively long distances under surveillance of another person, climb and go down the stairs with moderate assistance and the confusional elements being on easy regression.

Conclusions. The complexity of the case consists in favorable evolution of a serious neurological lesion, this being possible due to disorder and excellent interdisciplinary collaboration.

L71 - Plantar support - possibility to evaluate the patient, THERAPY AND MANUFACTURE OF FOOT ORTHOSES

Florin Dragan¹, Liliana Padure^{1,2}, Gelu Onose^{2,3}

1. CNCRNC Dr. Robanescu,
2. UMF Carol Davila
3. SCUBA

Abstract.

Introduction. The plantar support represents the contact of the foot with the support surface, highlighted in our Center- CNCRNC Dr. Nicolae Robanescu by the RSSCAN device 7 second generation 2 m plate with 16,000 sensors, in static (orthostatism) and dynamic (walking) support situations. The software of the device can interpret the manifestation of the foot on the support surface and recommend personalized plantar supports on each case. The plant is the body's landmark for walking as it is like the foundation of the house.

Material and method: The group of ambulatory patients from our Hospital, who have the obligation to evaluate the plantar support, because we wanted to see this from the beginning in order to make ADEQUATE PLANTING SUPPORTS.

Results: The association of custom-made plantar supports is an appropriate therapeutic addition, which helps to recover the leg with deformities, to supplement the trunk orthosis, of sight.

Conclusions: From the observation of our patients we saw how the plantar support is influenced by the wearing of glasses, the corset (which passively reduces the Cobb angle by 10 degrees on average) of the braces / braces.

Keywords: Plantar support, Cheaneu corset, plantar supports.

L72 - CHANGES OF SPIROGRAPHIC AND HEART RATE VARIABILITY PARAMETERS AFTER RESONANT BREATHING EXERCISE TRAINING

Matei Daniela, Luca Catalina, Fuor Robert, Sardaru Dragos, Corciova Calin

Corresponding author: Matei Daniela

Department of Biomedical Sciences, Faculty of Medical Bioengineering, University of
Medicine and Pharmacy "Grigore T. Popa" Iasi, Romania

Abstract.

Background: Breathing at resonance frequency, approximately 6 breaths/min (6BPM) is hypothesized to be a pathway through which we can improve heart rate variability (HRV). Higher levels of HRV are indicative of a healthy heart and low HRV predicts cardiovascular mortality and morbidity.

Objectives: The aim of the study was to evaluate the relationship between HRV parameters and the pulmonary functions before and after a program training consisting of breathing exercise at near resonant frequency (6 BPM).

Methods: 20 non-smoking subjects without respiratory problems (age, 21.7 ± 1.4 years) were randomly assigned (1:1) to the program training (PT, n=10) or control (CG, n=10) group. We measured height, weight, body mass index and computerized spirometry parameters: forced vital capacity (FVC), forced expiratory volume in 1 sec. (FEV_1), peak expiratory flow (PEF), maximal expiratory flow at 50% of vital capacity (MEF50). Time-domain indices of HRV such as mean RR, square root of the mean squared differences of successive normal to normal intervals (RMSSD), standard deviation of normal to normal interval (SDNN), and the proportion derived by dividing NN50 by the total number of NN intervals (pNN50), were calculated. Using Fast Fourier Transform (FFT) we analyzed frequency domain indices, low-frequency (LF) and high-frequency (HF) powers, LF/HF ratio. The subjects were reassessed after a training period of 10 minutes a day, 5 days a week for a month.

Results: The study has shown a statistically significant decrease of LF/HF ratio with $p < 0.03$ and increase of HF ($p < 0.01$). The training program significantly augmented the level of FEV_1 ($p < 0.04$), MEF50 ($p < 0.05$) as compared with their own baseline. Also, there was a significant correlation between HRV changes and the augmentation of respiratory performance in students receiving the training program.

Conclusions: Our findings indicated that 1 month of 6 BPM training can increase parasympathetic activity and lung function.

L73 - Analgesic and Anti-Inflammatory Potential of Artemisia Extracts on Experimental Models of Nociception

Bianca IVĂNESCU¹, Andreia CORCIOVĂ¹, Laurian VLASE², Ana-Maria GHELDIU²,
Anca MIRON¹, Daniela Carmen ABABEI¹, Veronica BILD¹

Corresponding author: Bianca IVĂNESCU, E-mail: biancaivanescu@yahoo.com



Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L73> OP Vol.11, No.3, September 2020 p: L73

¹"Grigore T. Popa" University of Medicine and Pharmacy, Faculty of Pharmacy, Iași, Romania,
²"Iuliu Hatieganu" University of Medicine and Pharmacy, Faculty of Pharmacy, Cluj-Napoca, Romania

Abstract

Introduction. The study aims to assess the antinociceptive and anti-inflammatory activity of extracts obtained from indigenous species of wormwood: *Artemisia absinthium*, *A. annua*, *A. vulgaris* and *A. pontica*.

Materials and methods. For these experiments, we employed nociception models using thermal stimulus (hot plate and tail immersion tests, $t = 52.5 \text{ }^{\circ}\text{C}$; 30, 60 and 90 minutes testing), chemical stimulus (Zymosan-induced abdominal constriction response test, using distinct lots and testing at 60, 90 and 120 minutes after administration of samples) and pressure stimulus (Randall Sellito test) and an inflammation model for the evaluation of inflammatory edema by Plethysmometer test. Groups of 6 Swiss mice / lot were used, receiving by oral administration the plant extracts suspended in 0.1% CMC-Na. The doses were administered in geometric progression.

Chemical analyses were performed by HPLC-MS in order to identify bioactive substances present in extracts: methoxylated flavonoids, sesquiterpene lactones, phytosterols and hydroxycinnamic acids.

All experiments were conducted in strict conformity with the specific regulations approved by "Grigore T. Popa" University of Medicine and Pharmacy Iași, European bioethical regulations (Directive 2010/63/EU) and International Association for the Study of Pain regulations.

Results. All plant extracts showed antinociceptive action on the models with thermal stimulus, as demonstrated by the ED₅₀ values obtained at different test times. In the models of nociception with chemical and mechanical stimulus, models based on inflammatory mediation, the studied fractions have partially proved their antinociceptive action. Regarding the degree of inhibition of inflammatory edema, the highest potency was exhibited by *Artemisia pontica* extract (86.5% inhibition for the dose of 100 mg/kg). Hispidulin and eupatorin, known anti-inflammatory compounds, were identified in all extracts, along with caffeic and chlorogenic acids, stigmasterol, campesterol and β -sitosterol.

Conclusions. The obtained results support the use of these plant extracts in moderate intensity pain, triggered by both central and peripheral mechanisms.

L74 - The Efficacy of Covasna Natural Factors in the Treatment of Chronic Diseases

Yuliya MANOLAKI¹, Andrei Stefan BICHIS¹, Lucia TURSAN¹

Corresponding author: Lucia TURSAN, E-mail: tursan@turismcovasna.ro



1 S.C. Turism Covasna

Abstract

Introduction. Covasna is an all-season spa and climatic resort for the treatment of cardiovascular diseases, situated at the foot of the western side of the Brețcu Mountains. It is the town of mofettes and mineral waters, with an intramountain depression climate, protected from strong currents and winds by the nearby forested ridge. The Covasna mineral waters are carbonated waters, with a bicarbonate, iron, sodium chloride, iodine-bromine, arsenic or slight sulfur content, rich in carbonic acid of volcanic origin. The mineral waters are used both internally and externally (CO₂ baths).

Objective. To study the pharmacodynamic action of the Covasna F3 mineral water for internal treatment.

Material and method. The study was conducted on 72 laboratory animals (52 white Wistar rats and 20 guinea pigs) by the research team of INRMFB.

Results. After administration of the Covasna F3 mineral water, it was observed that the gastric secretion volume remained unchanged, but the gastric juice pH values as well as total acidity decreased compared to the control group, and gastric juice pepsin values were also lower following mineral water administration. There was an increase in the activity of ATPase, a first-order energetic enzyme, and phosphatases, and a reduction of transaminases and phospholipids in the liver homogenate. The metabolic-enzymatic function in the hepatocyte affects choleresis, the bile secretion rate being dependent on hepatocytic metabolic processes; an increase in the secreted bile amount was observed in the group of animals that received mineral water compared to controls. The study of diuresis in rats reported an increase in the excreted urine amount, as well as in uric acid and urea nitrogen excretion in animals that received mineral water compared to the control group.

Conclusions. By analyzing the data obtained following this study regarding the pharmacodynamic action of the Covasna F3 mineral water, it was found that it induces buffering of gastric secretion and an increase in pepsin in the gastric mucosa, a rise in the excreted bile amount, in urine output, as well as in urinary uric acid and urea nitrogen excretion.

L75 - Very complex and difficult rehabilitation process in a post traumatic SCI complete tetraplegic patient with intense and refractory spasticity and frequency of spasm with presacral pressure sores (successfully operated)

**Ali-Osman Saglam, Ana Carmen Albeșteanu, George Patrașcu,
Laura Popescu, Luminita Nirlu, Gelu Onose**

Corresponding author: Ali-Osman Saglam, E-mail: aliosmansaglam1@gmail.com

1. "Bagdasar Arseni" Clinical Emergency Hospital, Bucharest
2. "Carol Davila" University of Medicine and Pharmacy, Bucharest

Abstract.

Introduction.

Spinal cord injury (SCI) is the injury of the spinal cord from the foramen magnum to the cauda equina which occurs as a result of compulsion, incision or contusion. As a result of the injury, the functions performed by the spinal cord are interrupted at the distal level of the injury. SCI causes serious disability among patients.

Material and method. Having the patient's consent and The Teaching Emergency Hospital "Bagdasar-Arseni" Ethics Committee's approval, a 48 years old patient, complete tetraplegic with intense and refractory spasticity and frequency of spasm with presacral pressure sores (successfully operated) post traumatic SCI

The patient was functionally assessed using the following scales: : Glasgow Outcome Scale, Modified Rankin Scale, Modified Ashworth, Penn Spasm Frequency Scale Functional Independence Measure, FAC International Scale, Quality of Life Assessment.

Results and discussions.

The complex neurological rehabilitation and nursing treatment, together with medical treatment, psychiatric and psychological evaluation and counseling, led to a favourable evolution.

Conclusions. Spasticity is a common secondary impairment after SCI characterized by hypertonus, increased intermittent or sustained involuntary somatic reflexes (hyperreflexia), clonus and painful muscle spasms. Severe spasticity may contribute to increased functional impairment, contractures, ulcers, posture disorders and pain. Treatment should start as soon as possible to prevent such negative effects

Key words. paraplegia, sci, spasticity, pressure sores, traumatism

L76 - Rehabilitation and Clinical-Evolutive Aspects in a Case of Paraplegia after Multilevel Lumbar Disc Herniation, Spinal Canal Stenosis and Spondylolisthesis Iteratively Operated, in a Pluripathological Context

Mihaela MANDU¹, Elena CONSTANTIN¹, Cristinel Dumitru BADIU^{1,2}, Alina BAJENARU¹,
Alexandru STAVRICA¹, Cristina CIMPEANU¹, Gelu ONOSE^{1,2}

Corresponding author: Mihaela MANDU, E-mail: mihaelamandu37@yahoo.com

1. Teaching Emergency Hospital Bagdasar Arseni (THEBA), Bucharest, Romania
2. University of Medicine and Pharmacy Carol Davila (UMPCD), Bucharest, Romania

Abstract

Introduction. Disc herniation occurs most commonly in the lumbar region (95-98% of the cases). The current trend is to have surgery on patients with disc herniation if the kinetic treatment was not beneficial. The data from the literature suggest that early active recovery after lumbar disc herniation is more beneficial than a traditional, less active training program.

Material and methods. Having the patient's consent and the approval of the Ethics Committee of "Bagdasar-Arseni" Clinical Emergency Hospital, N.O. 17464 / 14.06.2019, the paper presents the case of a 75-year-old paraplegic patient after multilevel lumbar disc herniation, spinal canal stenosis and spondylolisthesis iteratively operated, in pluripathological context (hyperplastic type II obesity, hypertension, prostate adenocarcinoma operated in 2015, Clostridium enterocolitis).

The patient was clinically and functionally evaluated, according to the standardized protocols implemented in our clinic, through the assessment scales (ASIA, FIM, FAC, QoL, Asworth and Penn) and also para-clinically, in order to evaluate his biological reserve and his bearing availability of the recovery program.

Results. The patient presented a slowly favorable evolution (slowed down not only by his multiple above-mentioned comorbidities) from a dysfunctional point of view.

Conclusions. Early active recovery after lumbar disc herniation surgery is more beneficial than a traditional, less active training program for operated herniated discs.

L77 - Ais-C Paraplegia Caused by Cervico-Thoracic Spinal Epidural Hematoma and Thoracic Subdural Hematoma – Clinical, Etiological (Mandatory Permanent Anticoagulant Therapy) and Physio-pathological Particularities

Gelu ONOSE^{1,2}, Alina-Oana BĂJENARU¹, Cristina CÎMPEANU¹, Mihaela MANDU¹,
Andreea DUMITRASCU¹, Iulia-Maria NOHAI¹, Daniel Costel SERBAN¹

Corresponding author: Alina-Oana BĂJENARU, E-mail: alina.bajenaru@ymail.com

1. Teaching Emergency Hospital Bagdasar Arseni (THEBA), Bucharest, Romania
2. University of Medicine and Pharmacy Carol Davila (UMPCD), Bucharest, Romania

Abstract

Introduction. Almost all of the spinal hematomas are discovered in the epidural space, in contrast with subdural hematomas, which constitute about 4.1% of all intraspinal hematomas.

The etiology of spinal hematomas includes vascular malformations of the spinal cord, an inadequate anticoagulant and/or antiplatelet treatment, inherited or acquired disorders of coagulation, intense Valsalva maneuvers, inflammatory myelitis, spinal cord tumors, abscess, idiopathic causes.

Material and methods. In this paper, approved by the Bioethical Committee of TEHBA (no3159/30.01.2020), we report a 64-years-old female, chronically anticoagulated with a vitamin K antagonist (acenocumarol) for a St Jude Medical aortic valve, presenting initially with thoracic pain followed by progressive paraparesis (AIS-C) and further neurogenic bladder, diagnosed with both an cervico-thoracic epidural hematoma and a thoracic subdural hematoma on the magnetic resonance imaging (MRI) who was treated conservatively and experienced significant neurologic improvement.

Results. The MRI revealed a complete resorption of the cervico-thoracic epidural hematoma and a reduction of the thoracic subdural hematoma, which corresponded with a favorable neurological outcome.

Conclusions. In spite of the fact that surgical decompression and evacuation of the hematoma is the first-line treatment of the spinal hematomas, our patient showed consistent imagistic resolution and earlier neurological improvement thus the non-surgical alternative was chosen. However, her clinical and functional improvement must be both further monitored and approached thus entailing a continuously fine tuning of the anticoagulant doses and the rehabilitation.

L78 - Topical Systematic and Synthetic Literature Review Regarding Men Sexual Dysfunctions After Spinal Cord Injury

Diana-Elena SERBAN¹, Cristina Octaviana DAIA^{1,3}, Ioana NEGOESCU CHEREGI², Vlad CIOBANU⁴, Liliana ONOSE⁵, Gelu ONOSE^{1,3}

Corresponding author Diana-Elena SERBAN, E-mail: diana90elena@gmail.com



DOAJ
DIRECTORY OF
OPEN ACCESS
JOURNALS



Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L78> OP Vol.11, No.3, September 2020 p: L78

1. Teaching Emergency Clinical Hospital “Bagdasar Arseni”, in Bucharest, Romania

2. Teaching Medical Rehabilitation Hospital in Baile Felix, Romania

3. University of Medicine and Pharmacy “Carol Davila”, in Bucharest, Romania

4. Computer Science Department, Politehnica University of Bucharest, Bucharest, Romania

5. Medical Service – Metrorex SA in Bucharest, Romania

Abstract

Introduction. Spinal cord injury (SCI) is a life-altering event usually associated with loss of motor and sensory, as well as with bladder, bowel and sexual, functions impairment – severely lowering the quality of life. After the acute stage of injury, recovering sexual function is important, especially because most of such patients are young and hence, previous to SCI, sexually active. Consequently, approaches of the pathology domain we focus according to the title above, are necessary. In this respect, in the related literature can be found data regarding mainly: diagnosis/evaluation issues therapeutic/assistive-rehabilitative interventions (including connected to fertility troubles) and of psychological and or educational specific counseling, kind.

Materials and methods. This paper presents a current systematic (of Preferred Reporting Items for Systematic Reviews and Meta-Analyses – PRISMA – type) and synthetic literature review on sexual dysfunctions and respected available management options in male subjects with SCI, using the following search keywords/ combinations of key words: “men”, “sexual dysfunction”/ “fertility” / “erectile dysfunction”/ “ejaculatory problems” / “sexual disorder”, “spinal cord injury”, “paraplegia”/ “tetraplegia” / “paraplegic”/ “tetraplegic”, “management”/ “treatment”, by interrogating international renown data bases: NCBI/PubMed, NCBI/PMC, Elsevier, PEDro and respectively, ISI Web of Knowledge/Science – to check whether the selected articles are published in ISI indexed journals – considering publications from January 2009 to June 2019, written in English, open access articles and being “fair”/“high” quality on our PEDro inspired, customized quality classification of the selected papers – the basic criterion, being the weighted citations number per year.

Results. We have found initially 647 articles and eventually, after accomplishing the PRISMA stages (without meta-analysis), we have selected 16 articles matching all the above mentioned quest method’s requests, covering (together with knowledge acquired from extra bibliographic resources, too) the main sexual subject matters men living with SCI are facing: erectile dysfunction (ED), ejaculatory and/or fertility problems, and consequent (dis)satisfaction and respectively, the principal current methods to mitigate the respective impairments, including with appropriate coping strategies.

Conclusions. Sexual disfunctions after SCI are complex and strongly add to the severe and multimodal disability the affected people – in the case of our work: men – experience. Therefore, they worth being fathomed and periodically reappraised.

Key words: *Spinal Cord injury (SCI), men sexual dysfunctions, systematic literature review*

Selected references:

1. <https://www.ncbi.nlm.nih.gov>
2. <https://www.elsevier.com/>
3. <http://search.pedro.org.au/search>
4. <https://apps.webofknowledge.com>
5. <http://prisma-statement.org/documents/PRISMA%202009%20flow%20diagram.pdf>
6. Hess MJ, Hough S. Impact of spinal cord injury on sexuality: broad-based clinical practice intervention and practical application. J Spinal Cord Med. 2012;35(4):211–218. doi:10.1179/2045772312Y.0000000025
7. Ibrahim E, Brackett NL, Lynne CM. Advances in the management of infertility in men with spinal cord injury. Asian J Androl. 2016;18(3):382–390. doi:10.4103/1008-682X.178851

L79 - A Complex Case of Neuro-Muscular Rehabilitation with Favorable Evolution, in a Patient with Incomplete Tetraplegia Post Cervical and Thoracic Traumatic Spinal Cord Injury - Surgically Treated, in a Polytrauma Context, By Car Accident

Andreea DUMITRAȘCU¹, Ioana ANDONE MD^{1,2}, Aura SPÎNU¹, Carmen CHIPĂRUȘ¹, Cristina POPESCU¹, Iulia NOHAI¹, Magdalena LAPADAT¹, Gelu ONOSE^{1,2}

Corresponding author: Andreea DUMITRAȘCU, E-mail: dumitrascu.andreea0417@gmail.com

1. Teaching Emergency Hospital Bagdasar Arseni (THEBA), Bucharest, Romania
2. University of Medicine and Pharmacy Carol Davila (UMPCD), Bucharest, Romania

Abstract

Introduction. Spinal cord injuries (SCI) are major conditions that usually determine severe and permanent dysfunctions, or even important loss of basic functions, generating severe or rather permanent sequels. They can have important chronic consequences such as: tetraplegia or paraplegia.

Material and methods. In this paper approved by the Bioethical Committee of TEHBA (no3159/30.01.2020), we present the case of a young 19-year-old patient who suffered in March 2019, a car accident (passenger) with spinal cord injury (SCI) at cervical and thoracic level in a polytraumatic context, hospitalized at the Neurosurgery Clinic (NS) II of TEHBA in a severe condition, for complete AIS/Frankel A tetraplegia, with a C7 fracture, T3, T4, T5 cominutive fractures with fragments in the medullary channel, minor traumatic brain injury, multiple costal fractures, abdominal trauma and respiratory failure. When the patient became hemodynamic and respiratory stable it was decided a neuro-surgical intervention initially at cervical level through an anterior approach, with mixed osteo-synthesis and C7 discectomy. Because of the spine instability, thoracic surgical treatment was delayed with 11 days, when he suffers a neurosurgery for medullary decompression, drainage and stabilization of the spine.

In our clinical division, the patient was admitted with an incomplete AIS/Frankel B tetraplegia and initially followed a rehabilitation nursing program and subsequently continued with a recovery therapy according to clinical stages. The patient was assessed functionally using the following scales: AIS/Frankel, modified Ashworth, Functional Independence Measure (FIM), Life Quality Assessment (QOL), FAC International Scale, Independence Assessment Scale in Daily Activities (ADL / IADL), Walking Scale for Spinal Cord Injury (WISCI).

Results. The patient benefited from a complex neuromuscular rehabilitation program, having a favorable evolution, with an increase in the evaluated scales scores – passing from AIS/Frankel B classification to a severe AIS/Frankel C stage, and thus, at the moment he is performing walking on short distances, through parallel bars, with long left leg orthosis and support from another person. It was tried a sphincter re-education, but, after a urologic examination, because of the important spasticity in the lower limbs and of the urinary catheterization discomfort, it was decided that for a while the patient to remain with fixed urinary catheterization.

Conclusions. Even if there is still no cure for SCI sequels, the accurate clinical-functional evaluation, the neurosurgical prompt therapeutic approach, adding complex nursing measures, personalized rehabilitative kinetological programs, in a young patient with SCI by car accident, determined neuro-locomotor improvements with an increase in patient's quality of life.

Bibliography:

1. Onose G., Anghelescu A., Ghid de diagnostic, tratament și reabilitare în suferințe după traumatisme vertebro-medulare, Editura Universitară "Carol Davila" București, 2011
2. Lin Vernon W, Cardenas Diana D, et al. Spinal Cord Medicine: principles and practice- Demos Medical Publishing, Inc., New York, 2003

L80 - CURRENT OVERVIEW REGARDING cLOSTRIDIUM DIFFICILE ENTEROCOLITIS IN a NEURODISABLED INPATIENT AND a SYSTEMATIC LITERATURE REVIEW AND THE EFFICACY OF THE RELATED TREATMENT WITH IMMUNOGLOBULIN Y

Mihaela MANDU¹, Cristinel Dumitru BADIU^{1,2}, Gelu ONOSE^{1,2}

Corresponding author: Mihaela Mandu, E-mail: mihaelamandu37@yahoo.com

Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L80> OP Vol.11, No.3, September 2020 p: L80

1. "Bagdasar Arseni" Clinical Emergency Hospital, Bucharest
2. "Carol Davila" University of Medicine and Pharmacy, Bucharest

Abstract.

INTRODUCTION

Enterocolitis with *Clostridium difficile* represents a disturbance of the normal microbial flora of the colon. *Clostridium difficile* infections occur most commonly in hospitalized patients, with antibiotic therapy being a common factor that changes the beneficial bacterial flora. The incidence of enterocolitis with *Clostridium difficile* has increased in recent years, especially in immunocompromised patients or those with *Neurological Disabilities*. Immunotherapy targeting bacterial toxins is gaining interest at the expense of conventional antibiotic therapy. Immunoglobulin Y is obtained from the yolk of eggs harvested from hens immunized with *Clostridium difficile* antigen.

MATERIAL AND METHODS

By extending the literature review on enterocolitis with *Clostridium difficile* on the one hand and, by analyzing the action of immunoglobulin, antibacterial and immune stimulating/ modulating actions, and also by looking into the systematic literature review on the factors on the specific intervention (Immunoglobulin Y) on the targets' pathology (*Clostridium enterocolitis*) on the other hand, we have come to the conclusion that there are very few papers with such specifications.

THE RESULTS OF THE LITERATURE REVIEW

It seems that the administration of Immunoglobulin Y therapy has been efficient in *Clostridium enterocolitis* so far, thus preventing the relapse of the disease. Immunotherapy has gained interest as a non-antibiotic alternative for the treatment of infectious diseases, including the infection with *Clostridium difficile*.

CONCLUSIONS: The results of the literature review show that there are not enough studies on the efficacy of the immunoglobulin Y treatment in patients with *Clostridium difficile enterocolitis*. Therefore, this literature review will be used as the basis of future applied research.

KEYWORDS: *immunoglobulin y, clostridium, enterocolitis, Neuro-disability*

L81 - Fuzzy Regression Models as Model of Relationship among Variables, a Prospective Analysis for Applications in Kinetotherapy

Dragos Arotaritei¹, Iustina Condurache¹, Marius Turnea^{1*}, Catalin Ionite¹, Mariana Rotariu¹

Corresponding author: Marius Turnea, E-mail: tmarius_ro@yahoo.com

1. University of Medicine and Pharmacy „Grigore T. Popa”, Street University, No. 16, Iași, România

Abstract.

Introduction

Linear regression is practically the most used way to show relationship among variables in kinetotherapy and sports medicine. This relationship shows a linear connection among variables. It is worth to mention beside the generalized linear models (GLM) there are many nonlinear models: Michaelis–Menten model for enzyme kinetics, polynomial, multinomial, response surface methods (first, second and third order) and so on. Many nonlinear problems can be linearized moving the domain in a linear one by a suitable transformation, e.g. logarithm function. The experimental data are not fit perfectly on the regression curve. There are always clouds of points that are distributed around the curve that is there are we discuss about the most probable curve according to some criteria of fitting (the minimization of least mean square – LMS, e.g.).

Materials and methods:

Fuzzy systems offer a theoretical and practical support to deal with vaguely determined variables. Much more, this theory offers the possibility to infer linear or nonlinear relationship among categorical data. Fuzzy numbers are fuzzy set that show a particular shape (triangular, trapezoidal, Gaussian, Cauchy, etc.) with extended arithmetic fuzzy operators (fuzzy sum, fuzzy difference fuzzy product, fuzzy division) in fuzzy framework.

Results

The experimental results are made on a practical application related to skin absorption and. The results showed a good fit of data with the mathematical formula with an probabilistic view that include the most probable curve along with possibilistic other curves close each of them having a certain degree of truth.

Conclusions

Alternative crisp approach in regression analysis, the fuzzy regression offers a larger perspective over relationship among crisp/fuzzy variables along with categorical variables quantified in fuzzy numbers. More application can be developed using this proposed techniques and solution can include all the points except the outliers.

Key words: *fuzzy regression model, fuzzy sets, mathematical models, mathematical relationship, kinetotherapy.*

L82 - Case Presentation of a Patient with an Onset of Psychotic Disorder, Polytraumatized by Defenestration From 10th Floor, with Thoraco-Lumbar SCI, And Multiple Somatic Fractures, with Favorable Neuro-Motor and Psychiatric Evolution

Iulia-Maria NOHAI¹, Andreea DUMITRASCU¹, Alina Oana BAJENARU¹, Cristina CIMPEANU¹, Simona-Isabelle STOICA^{1,2}, Ioana ANDONE^{1,2}, Carmen CHIPARUS¹, Gelu ONOSE^{1,2}

Corresponding author: Iulia-Maria NOHAI, E-mail: nohai.n83@gmail.com

1. Teaching Emergency Hospital „Bagdasar-Arseni” Bucharest (TEHBA)
2. University of Medicine and Pharmacy “Carol Davila” in Bucharest, Romania

Abstract

Introduction. Traumatic fractures of the spine are most common at the thoracolumbar junction and can be a source of great disability. Most of them occur due to motor vehicle injuries and falls from a height. Since these are high-velocity injuries, thoracolumbar fractures are commonly associated with other injuries like rib fractures, pneumo-hemothorax, and rarely great vessel injuries, hemopericardium and diaphragmatic rupture

Materials and methods. Having the patient and the THEBA Bioethics Committee approval (no. 3159/30.01.2020), we will present the case of a 26-year-old patient who suffered a polytrauma due to defenestration from the 10th floor - about 30 m high - resulted in thoraco-lumbar SCI, associated with other severe injuries, hospitalized in Neuromuscular Recovery Ward by transfer from the Neurosurgery Ward of our hospital, for neuromotor recovery, presenting a L1 AIS/ Frankel Quadriplegia and neurogenic bladder. During hospitalization, the patient presented psychomotor agitation, food and medication rejection, which is why repeated psychiatric evaluations were requested and performed.

Following the rehabilitation program, the patient's evolution was favorable: recovered the weight deficit, improved the motor control and sensitivity, the urethral indwelling catheter was suppressed and the intermittent catheterization program was started with later regaining of the micturition control.

The patient was assessed functionally using the following scales: AIS / Frankel, modified Ashworth, Functional Independence Assessment (FIM), Life Quality Assessment (QOL), FAC International Scale, Independence Assessment Scale in Daily Activities (ADL / IADL).

Results. The patient benefited from a complex program of neuromuscular rehabilitation, with a favorable evolution, with the increasing scores from the evaluated scales and, thus, with a final performance of walking with support on short distances, as well as a sphincter reeducation with the neurogenic bladder remission.

Conclusions. Associating interdisciplinary approach with a customized rehabilitation program in a patient with an onset of psychotic disorder, polytraumatized by defenestration from the 10th floor, with thoraco-lumbar SCI and other severe injuries led to neuromotor and psychiatric improvements, and sphincter function reeducation with an important improvement in patient's quality of life.

L83 - DIFFICULT – BECAUSE OF THE MAIN DISEASE’S ETIOLOGY AND CONNECTED COMORBIDITIES – BUT FAVOURABLE EVOLUTION IN A CASE OF TYPE B NEURINOMA OF PONTACEREBELLAR ANGLE, PARTIALLY REMOVED NEUROSURGICALLY -CASE REPORT

Ana Carmen REBEDEA¹ Laura Georgiana POPESCU¹, Luminița NIRLU¹, Ali OSMAN SAGLAM¹, Gelu ONOSE^{1,2}

Corresponding author: Ana Carmen REBEDEA, E-mail: ana.albesteanu@gmail.com

Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L83> OP Vol.11. No.3, September 2020 p: L83

¹ Teaching Emergency Hospital „Bagdasar-Arseni” Bucharest (TEHBA)

² University of Medicine and Pharmacy “Carol Davila” in Bucharest, Romania

Abstract.

Introduction

A schwannoma, or a type B neurinoma, is a type of nerve tumor of the nerve sheath. It's the most common type of benign peripheral nerve tumor in adults. It can occur anywhere in the body, at any age. A schwannoma typically comes from a single bundle (fascicle) within the main nerve and displaces the rest of the nerve. When a schwannoma grows larger, more fascicles are affected, making removal more difficult. In general, a schwannoma grows slowly.¹

Materials and Methods

Having the patient's consent and The Teaching Emergency Hospital “Bagdasar-Arseni” Ethics Committee N.O 34136 from 18.11.2019, the current case report presents the case of a 30-year-old patient, diagnosed with type B neurinoma- partially removed neurosurgically. He was admitted in our Neuromuscular Clinic Division with the following health problems: spastic quadriplegia, expressive aphasia, dysphasia, amaurosis in the right eye, sixth cranial nerve paralysis on both sides, neurogenic bladder, hearing impairments and respiratory insufficiency. During his admission, the patient also developed keratoconjunctivitis in the right eye, an anxiety disorder, a urinary tract infection, and severe pulmonary infection.

He was admitted into our clinic for the quadriplegic motor deficit, dysphagia, and aphasia, severe locomotor and self-grooming dysfunction.

Results

The patient improved on most of the assessment scales/scores implemented in our Clinic's Division Motor FIM (Functional Independence Measure) from 13/91 to 38/91, and Cognitive FIM from 14/35 to 20/35, FAC (Functional Ambulation Categories) from 0/5 to 2/5. The most important improvement in our patient's evolution was his ability to start walking again.

Conclusions

Following a complex neuro-recovery program developed by a multidisciplinary team made of doctors, kinesio-therapists, middle and allied health personnel, the patient had a very good evolution. At his last discharge from our clinic, he could walk with unilateral support on a fixed stand and moderate support from the kinesio-therapist.

¹ <https://www.mayoclinic.org/diseases-conditions/schwannoma/>

L84 - Prophylactic/therapeutic modalities in vertebral balance disorders in children aged 10-12 years

Elena Vizitiu¹, Sînziana Călina Silișteanu^{1,2}, Mihai Constantinescu¹

Corresponding author: Sînziana Silisteanu, E-mail: sinzi_silisteanu@yahoo.com

^{1,2} "Stefan cel Mare" University of Suceava FEFS-DSDU, Railway Hospital Iasi - Specialty Ambulatory of Suceava

¹ "Stefan cel Mare" University of Suceava

¹ Kinetic therapist - "Stefan cel Mare" University of Suceava

Abstract.

Introduction. Vertebral balance disorders are a health problem for children in general, with long-term consequences. Having in view that the number of new cases with this condition has increased, it is mandatory to introduce health programs and it is useful to perform a screening for vertebral balance disorders by groups of age (pre-puberty, puberty, teenage).

The objective of the study was to assess the functional status of the child aged 10-12 years and to elaborate the prophylaxis/ treatment program. The purpose was to draw the attention on the prevalence of vertebral balance disorders in young people, with possible consequences in adult age.

Material and method. The study was performed for a period of 1 year and included 86 children. After the clinical, anthropometric and somatoscopic evaluation, the recovery plan was designed, as well as the prophylaxis for certain cases. The purpose was to create the right posture reflex, to tone up the paravertebral and abdominal muscles, to increase the joint mobility and to fight obesity. The kinetic program was performed 3 times/week, 30 minutes/session. All children participated in a therapeutic swimming session every week.

Results. It was found in the study group that over 51% were girls, around 30.23% of children were diagnosed with scoliotic attitude, 44.19% with kyphotic attitude and about 25.58% had a normal postural attitude.

Conclusions. The used kinetotherapy program (on land and in water) showed the improvement of the general alignment, the ability of focusing and the adaptation to the school activities. The existence of a multidisciplinary team ensuring the recovery program is an effective method by which the beneficial results can be obtained for the health condition of this age group.

L85 - Seasonal and Circaseptan Variation of Stroke Occurrence

Dana Marieta FODOR¹, Gabriela DOGARU¹, Lăcrămioara PERJU-DUMBRAVĂ¹

Corresponding author: Dana Marieta FODOR, E-mail: fodordana@yahoo.com

¹“Iuliu Hațieganu” University of Medicine and Pharmacy, Cluj-Napoca, Romania

Abstract

Introduction. Cerebrovascular events are not randomly distributed over time. In addition to the better known circadian variation, the occurrence of different vascular pathologies, including stroke, describes infradian rhythms such as the seasonal or circannual variation (related by climatic cyclic changes) and the circaseptan or weekly variation (a conventional rhythm, not a terrestrial one).

Objectives. The aim of our study was to investigate whether stroke with its types follows a seasonal and a circaseptan occurrence pattern in the Cluj-Napoca area.

Materials and methods. The stroke event data were collected from the patient records of a consecutive series of 1083 patients admitted through the Emergency Room to the Neurology Departments I and II of the County Hospital Cluj-Napoca, between 1 January 2012 and 31 December 2012. The diagnosis of ischemic stroke, intracerebral hemorrhage and subarachnoid hemorrhage was confirmed by neurologic examination and neuroimaging, according to updated WHO criteria. The onset time was assigned to one of the four seasons and also to the corresponding day of the week. Statistical analysis was performed using Excel Microsoft.

Results. All three types of stroke showed a seasonal variation in their occurrence, with two peaks, one in the winter and the second in the summer. The circaseptan variation of stroke onset also reveals two incidence peaks, one over the weekend continuing through Monday and the other one in the middle of the week. Age, sex and the type/subtype of stroke enhances one of these peaks.

Conclusions. The knowledge of the seasonal variation pattern of stroke occurrence could provide a basis for preventive and therapeutic strategies in cerebrovascular pathology, such as prevention infectious and inflammatory episodes during cold season and dehydration in the summer, also for changes in the lifestyle and psychophysiological stress related by transition from weekend to workdays.

L86 - CORRELATIONS BETWEEN PROFESSIONAL RISK FACTORS AND THE PAIN AND THE DISABILITY OF THE UPPER LIMB AND LOWER BACK AT LABOR INSPECTORS

Dorin-Gheorghe TRIFF

Corresponding author: Dorin-Gheorghe TRIFF, E-mail: triffdorin@gmail.com



Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L86> OP Vol.11, No.3, September 2020 p: L86

Occupational medicine department
Emergency Hospital County of Baia Mare

Abstract.

Within the periodic medical control, the inspectors from a territorial labor inspectorate received, for voluntary completion, a questionnaire that scored their perception on the professional risk factors. The form had comprised the following individual characteristics of inspectors: body mass index(BMI), age, sex, number of persons at home, number of children, duration of the daily commute, financial situation, communication at home, number of hours spent daily at work, number of extra hours spent daily in the same domain of activity as service. At the same time, the inspectors received, for voluntary completion, The Disabilities of the Arm, Shoulder and Hand (DASH) Questionnaire and Roland Morris Low Back Pain and Disability Questionnaire(RMQuestionnaire).

Results

Those who perceive the presence of neuropsychological stress at work have significantly increased: age ($p = 0.021$), the score on the RMQuestionnaire ($p = 0.019$) and BMI ($p = 0.019$).

Those who perceive the presence of osteo-muscular joint overload have significantly increased: age ($p = 0.013$), the score on the RMQuestionnaire ($p = 0.036$), and also have significantly lower number of persons at home ($p = 0.027$).

Compared to women, men have increased body mass index ($p < 0.001$) and the perception of the presence of physical effort at work ($p = 0.025$). Age correlates significantly with score on the DASH questionnaire ($p = 0.001$) RMQuestionnaire ($p = 0.006$). Body mass index is positively correlated with the perception of the presence of increased physical effort at work ($p = 0.021$). The score on the DASH questionnaire correlates positively with that on the RMQuestionnaire ($p < 0.001$).

Conclusions

Those with high BMI consider that physical exertion is increased at work. Age correlates positively with lumbar and upper limb algal symptoms. Higher Low-Back-Pain and Disability is associated with the higher Disability of the upper limb.

L87 - Relationships between Temporomandibular Disorders and Cervical Spine Disorders: The Appropriate Physiotherapeutic Approach

M. D. Crăciun¹

Corresponding author: M. D. Crăciun, E-mail: danielacr@usv.ro



DOAJ
DIRECTORY OF
OPEN ACCESS
JOURNALS



Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.L87> OP Vol.11, No.3, September 2020 p: L87

1. Ștefan cel Mare University of Suceava, Romania

Abstract

Introduction. Between the orofacial area and the cervical spine there are neuroanatomical and neurophysiological interconnections.

Material and methods. Thirty seven patients with temporomandibular and cervical symptoms formed the experimental group and thirty five patients only temporomandibular symptoms formed the control group. The temporomandibular evaluation aimed at the assessment of the orofacial pain, the range of motion and the assessment of the masticatory muscles and cervical evaluation aimed at the assessment ranges of motion, cervical disability and presence of painful palpation sites.

Results. The average values are higher in VAS scores at patients with temporomandibular disorders (TMD) and cervical dysfunctions. Also, dysfunctional indices are higher at patients with cervical impairment. Most parameters of the active field of cervical movement presented an improvement over time.

Conclusions. The most important approaches for TMD physiotherapy treatment is the modification of craniocervical biomechanics and its effects to posture as an etiologic or perpetuating TMD factor.

L88 - Management of vestibular disorders

Liviu Lazăr, Carmen Nistor Cseppentő, Florin Marcu, Felicia Cioară

Corresponding author: Liviu Lazăr, E-mail: lazarlv@yahoo.com

University of Oradea, Faculty of Medicine and Pharmacy,
Rehabilitation Clinical Hospital Felix Spa

Abstract.

Introduction:

Vestibular neuronitis and acute viral labyrinthitis, benign paroxysmal positional vertigo, Meniere's disease, perilymphatic fistula and acoustic neuroma can be same causes of vestibular and balance dysfunction.

The symptoms result from pathology within the vestibular system that reduces the patient's ability to move about his or her environment without imbalance and vertigo.

Material and methods:

Disruptions of balance, dizziness and vertigo have a negative impact on one's ability to live independently and to perform routines of daily life. Balance is actually a complicated function maintained by signals the brain receives from muscles and joints, eyes and the inner ear.

A comprehensive assessment can identify the types of strategies a person uses to balance, gait abnormalities, the integrity of musculoskeletal system, head/eye coordination and motion perception. After assessment, an individualized exercise program is developed to reduce movement or positional dizziness and to improve postural control and gaze stabilization. It is essential that same kind of physical activity be continued on an ongoing basis and become a life-long practice.

Results:

Physiatric management of patients with vestibular disorders requires a coordinated multidisciplinary program that includes training in compensation and therapeutic exercises. Habituation and adaptation to motion-provoked symptoms occur by readjustment of vestibulospinal, cervicocolar, visuocolar and vestibulocolar reflexes.

Patients may also be instructed in relaxation exercises to reduce fatigue and muscle tension. Education is very important to help patients understand the cause of their symptoms and how to manage them. Vestibular rehabilitation utilizes a home exercise program that is performed daily.

In conclusion, management of vestibular disorders includes the treatment of underlying pathology along with a vestibular rehabilitation program. The physiatrist should be familiar with these treatments and techniques so as to help reduce mobility and balance dysfunction.

L89 - Clinical-Evolutive Particularities and the Main Multimodal Therapeutic Difficulties in a Patient with Schizophrenia who Suffered a TSCI By Falling from Height (Affirmative Suicide Attempt) - A Case Report

Mihaela MANDU¹, Elena CONSTANTIN¹, Cristinel Dumitru BADIU^{1,2}, Alina BAJENARU¹, Alexandru STAVRICA¹, Cristina CIMPEANU¹, Gelu ONOSE^{1,2}

Corresponding author: Mihaela MANDU, E-mail: mihaelamandu37@yahoo.com

1. Teaching Emergency Hospital „Bagdasar-Arseni” Bucharest (TEHBA)
2. University of Medicine and Pharmacy “Carol Davila” in Bucharest, Romania

Abstract

Introduction. Schizophrenia is a surprisingly common chronic psychiatric illness in the general population affecting 1 in 100 people worldwide. Although the symptoms widely differ from one case to another, schizophrenia is quite difficult to recognize because the patient can behave normally and appropriately in different social situations. Studies in the literature highlight that the majority of the patients with SCI and pre-existing schizophrenia have suffered accidents as a result of voluntary height adjustments. Also, 37.5% of the suicide attempts with SCI are caused by schizophrenia and depression. The main difficulties encountered in the recovery of these patients are the psychiatric manifestations. At the same time, the risk of suicide in patients with schizophrenia after suffering from SCI is higher than those with SCI without schizophrenia. Therefore, the recovery of the patients with SCI and schizophrenia is a complex process which requires the control of the psychiatric symptoms. A multidisciplinary team is required for such a purpose.

Materials and methods. Having the patient's consent and approval of the Ethics Committee of “Bagdasar-Arseni” Clinical Emergency Hospital, N.O. 3159/30.01.2020, the paper presents the case of a 23-year-old female patient with AIS/ Frankel B flaccid paraplegia after TVML after falling from height (affirmative through window-suicide attempt) operated on, in a polytraumatic context. The patient is known with schizophrenia and she was being monitored by a psychiatrist at the time of the accident, but she voluntarily discontinued treatment during that period. The patient was clinically and functionally evaluated, according to the standardized protocols implemented in our clinic, through the assessment scales (ASIA, FIM, FAC, QoL, Asworth and Penn) and also para-clinically, in order to evaluate her biological reserve and her bearing availability of the recovery program.

Results. The patient presented a slowly favorable evolution (slowed down by her severe motor deficit, but also by her psychiatric symptoms such as affective ability with depressive, negative behavior, depersonalization).

Conclusions. The main difficulties encountered in the recovery of these patients are the psychiatric manifestations. Therefore, the recovery of patients with SCI and schizophrenia is a complex process that first requires the control of psychiatric symptoms. A multidisciplinary team is required for such a purpose.

Keywords: *schizophrenia, spinal cord injury, fall of height*

L90 - Contribution of Factors in Regression Analyze with Application in Kinetotherapy and Sports Medicine

Marius Turnea¹, Arotaritei Dragos^{1*}, Catalin Ionite¹, Iustina Condurache¹, Mariana Rotariu¹

Corresponding author: Arotaritei Dragos, E-mail: dragos_aro@yahoo.com

¹ University of Medicine and Pharmacy „Grigore T. Popa”, Street University, No. 16, Iași, România

Abstract.

Introduction

The most influential variables in regression analysis can suggest actions that can be made in order to improve the results in kinetotherapy, sport medicine and rehabilitation. Linear regression is practically the most used ways to show relationship among variables in kinetotherapy and sports medicine. This relationship shows a linear connection among variables a connection of first order. Variants as RSM (response surface method) of order two and three include nonlinear interactions among the variables. The constant parameters can moderate or increase the contribution of variables at the final formula of predictor, and results of procedures numerically quantified as variables can contribute to a better understand of process modeled by regression. The parameters can be ranked taking into account their influence on process so that the kinetotherapists can prioritize their action in the rehabilitation plan.

Materials and methods

The range of values for each independent variable and the dependent variable are taken into account. A special case is taken into account when the linear relationship has a small parameter; in this case a normalization procedure is required. The evaluation of contribution is made in percent from total outcome. In the case of linear relationship the approach is relatively simple but in the case of nonlinear case the proposed method is more complex and it is based on statistical random generators applied on the combination of variables spread on the domain of definition of all the components. This method needs a dynamical approach different from quasi-static one that can be applied in the linear case.

Results

The method is applied to three cases in presented in literature: two for linear case and one for nonlinear regression of second order. The results showed a reasonable perspective to alleviate the recovering plan using simple mathematical methods.

Conclusions

The proposed method can be a useful tool of work for kinetotherapy, sport medicine and rehabilitation. The cases on nonlinear relationship are rarely in literature, so this aspect must be investigated more deeply in the future

Key words: *linear regression analysis, mathematical model, response surface method, statistical analysis, sportive performance.*

Victoria CHIHAI¹, Alisa TĂBÎRȚĂ¹, Marina BULAI¹, Viorica JURJIU¹,
Sergiu PETROȘIȘIN¹

Corresponding author: Victoria CHIHAI, E-mail: victoria.chihai@usmf.md

1. State University of Medicine and Pharmacy "Nicolae Testemitanu", Chisinau, Republic of Moldova, The Department of Medical Rehabilitation, Physical Medicine and Manual Therapy

Abstract

Introduction. In a constantly evolving competitive society, personal health is increasingly neglected due to the fast pace of life, affected by exhausting work, unhealthy diet, and stressful lifestyle. But any man would like to keep his health and that is why he is looking for the most appropriate way for himself. At present, there are two medical doctrines: Western (rationalist), based on Socrates' thesis "Know thyself" and the Eastern one, based on Confucius thesis "Create thyself". [1,5]

Materials and methods. Traditional Chinese medicine (MTC) is 5000 years old. With a huge data hoard, a refined culture dedicated to health care and prolonging life, it includes Phyto-therapy (herbal medicine), acupuncture, moxa therapy, pre-puncture, cupping therapy, massage (tui na), exercise (Qigong) and dietary therapy, but is currently influenced by Western modern medicine. Traditional Chinese medicine is a complement and not an alternative, which is based on a fundamental principle: the existence of the two components of nature, Yin and Yang, opposite and yet complementary elements, the theory of the 5 elements (water, fire, wood, earth, metal).), the theory of internal energy (Qi). By performing TCM techniques, we aim to restore a harmonious flow of Qi vital force through the body, thus allowing the body to heal in a natural way. [4] Since the Zhou Dynasty (1046–771 BC), it is well known that: “the patient's prognosis can be predicted by five smells, five sounds and five colors, accompanied by changes in the nine holes (two eyes, two ears, two nostrils, mouth, urethra and anus) and nine organs (heart, liver, spleen, lungs, kidneys, stomach, large intestine, small intestine, and bladder). ” So the diagnostic methods are purely external, including the interview. of the patient, inspection, pulse examination, patient's tongue. [2] Physical medicine and rehabilitation is a branch of medicine that is concerned with promoting physical and cognitive functioning, activities (including behavior), participation (including quality of life) and changing personal and environmental factors. Thus, she is responsible for the prevention, diagnosis, treatment and management of the rehabilitation of people with disabling conditions and co-morbidities at all ages. [3] We aim to combine these techniques to achieve much better results and to find out what the prospects and challenges are.

Results. Traditional Chinese medicine used in rehabilitation can improve pain, increase muscle strength, reduce spasticity, and harmonize the mental state of the patient associated with the disease.

Conclusions. The integration of academic science and traditional experience, of Western and Eastern visions on maintaining and strengthening population health, prophylaxis, treatment, and recovery of diseases is very important. MTC methods can be used as complementary methods in medical rehabilitation to increase recovery performance.

Keywords: *Traditional Chinese medicine, alternative treatment, rehabilitation*

References:

1. Lacusta V. Experiența internațională de integrare a medicinei tradiționale și medicinei occidentale, Buletinul Asociației Medicină Tradițională din Republica Moldova. Chișinău, 2007. Vol. 12. p. 5-8.
2. Fundamentals of Traditional Chinese Medicine by Hong-zhou Wu, Zhao-qin Fang and Pan-ji Cheng (translated by Ye-bo He) (Shanghai University of Traditional Chinese Medicine, China) ISBN: 978-1-938134-28-9 (pbk)
3. Ggidul de practică în specialitatea Recuperare (Reabilitare), Medicină Fizică și Balneologie matie 2010
4. https://issuu.com/maria001234/docs/compendium_de_medicina_traditionala
5. <http://www.akademos.asm.md/files/Medicina%20alternativ%C4%83%20%E2%80%93%20integrarea%20cu%20medicina.pdf>

P2 - Intermediate Steps Towards the Achievement of an Official Romanian Translation of The Fugl-Meyer Assessment Scale Specific Forms

Elena CONSTANTIN¹, Mihaela MANDU¹, Dumitru Cristinel BADIU^{1,2}, Gelu ONOSE^{1,2}

Corresponding author: Elena CONSTANTIN, E-mail: 13celena@gmail.com

1. Teaching Emergency Hospital „Bagdasar-Arseni” Bucharest (TEHBA)
2. University of Medicine and Pharmacy “Carol Davila” in Bucharest, Romania

Abstract

Introduction. The Fugl-Meyer assessment scale for the evaluation of neuro-sensory-motor deficits after stroke represents, by completeness and adequate folding, both conceptually and methodologically, on the physio pathological and clinical-evolutionary reality of disability in this type of pathology, a widely used quantification tool for international level and well appreciated in many works in profile literature.

Materials and methods. From the desire to implement the scale within the neurorehabilitation units in our country, some correspondence with the right holders of the use of the scale within the University of Gothenburg was initiated in 2019. Subsequently, the group proposed us to carry out an official translation according to an algorithm for achieving the unitary translation, agreed and recommended by the official administrators of the standardized forms of the scale, which will be included on the official website of the respective university along with other translations.

Results. Following the initial steps, a constructive correspondence was maintained with the official administrators of the University of Gothenburg and in accordance with the mutual agreement, we carried out the translation from English into Romanian of the specific forms on the official site. The translation included, at the recommendation of the Gothenberg collective, only the component used for measuring the motor functions for the upper and lower extremities. In addition, Prof. Dr. Roxana Carare was co-opted in the team of. Currently, the confrontation of the translation version of our team with the one made by her (forward from English to Romanian) is underway. Within the confrontation of forward translation, different shades of formulations were found at different levels.

Conclusions. In the later stages, the reverse confrontation from Romanian to English (backward) of the two translated variants is considered. At the same time, the coordinator of the administrators of the scale of the University of Gothenburg, Prof. Dr. Margit Alt Murphy, expressed her availability of assistance at all stages of the translation process.

References:

- 1.Fugl-Meyer AR, Jääskö L, Leyman I, Olsson S, Steglind S. The post-stroke hemiplegic patient. 1. a method for evaluation of physical performance. Scandinavian Journal of Rehabilitation Medicine. 1975 ;7(1):13-31.
- 2.<https://www.sralab.org/rehabilitation-measures/fugl-meyer-assessment-motor-recovery-after-stroke>
- 3.https://www.strokeengine.ca/en/quick/fma_quick/
- 4.http://neurophys.gu.se/digitalAssets/1520/1520603_fma-ue-protocol-english-updated-20150311.pdf

P3 - Treatment modulation with natural therapeutic factors from Techirghiol lake for the patients with stroke, high blood pressure and diabetes

Stanciu Liliana-Elena^{1,2,*}, Ionescu Elena-Valentina^{1,2}, Chiriac Marius-Sorin^{1,2}, Iliescu Madalina-Gabriela^{1,2}, Bobe Zoe-Maria^{1,2}

Corresponding author: *Stanciu Liliana-Elena, e-mail: lilianastanciu77@yahoo.com*

¹Balneal and Rehabilitation Sanatorium Techirghiol, Techirghiol, Romania
²„Ovidius” University of Constanta, Faculty of Medicine, Constanta, Romania

Abstract.

Introduction. Natural therapeutic factors from Techirghiol lake area represents an important sector of balneal treatments in our country, that's why we try to demonstrate the major effects of these treatments over the quality of life of the patients with combined stroke, high blood pressure and diabetes.

Material and methods. Our study group was selected from 1377 patients from Balneal Rehabilitation Sanatorium of Techirghiol. 562 patients included in balneal specific treatments have been associated high blood pressure, 26 of them were diagnosed with stroke, 80 with high blood pressure and diabetes type 2 and 19 patients with associated high blood pressure and stroke. Two of the patients were diagnosed with stroke and diabetes type 2 and only one with all three : stroke, high blood pressure and diabetes.

Results. The data obtained by analysing the presence of high blood pressure, diabetes or stroke related with age and gender of each patient from the study group demonstrates a direct correlation with these parameters. The main scale of quality of life, such as Functional Independence Measure (FIM), was influenced by the therapeutical methods of treatment from sanatorium in this group of patients.

Conclusion. There is a treatment modulation using natural therapeutic factors from Techirghiol lake area in patients with stroke and important comorbidities like high blood pressure and diabetes.

Key words: balneal, stroke, quality of life, Techirghiol

References:

1. M.V. KAMENEVA, M.J. WATACH, H.S. BOROVETZ: Gender Difference in Rheologic Properties of Blood and Risk of Cardiovascular Diseases. ClinHemorheolMicrocirc,**21** (3-4), 357 (1999)
2. A.A. LUPU, E.V. IONESCU, M.G. ILIESCU, R.E. ALMASAN, C. OPREA, I. ION, D.M. ILIESCU: Effect of Techirghiol specific climate factors on the patients quality of life with degenerative lumbar pain.J Environ ProtEcol, **19** (4), 1857 (2018)
3. A. BARBULESCU, C. MAFTEI: Modeling the climate in the area of Techirghiol Lake (Romania), Rom. Journ. Phys,**60** (7-8), 1163, (2015)
4. VOS T., ABAJOBIR A.A., ABBAFATI C. et all - Global, regional, and national incidence, prevalence, and years lived with disability for 328 diseases and injuries for 195 countries, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016 - The Lancet,**390** (10100), 1211, (2017)

P4 - Multidisciplinary Neurorehabilitation Approach in Children with Severe Traumatic Brain Injury in „Dr Nicolae Robanescu” National Neurorehabilitation Center For Children

Andra Pintilie¹, Liliana Pădure¹, Anca Grigoriu¹, Mihaela Axente,¹

1. Pediatric Neuro-psycho-motor Rehabilitation National Teaching Centre “Dr. N. Robanescu”

Abstract

Introduction. Severe Traumatic Brain Injury (TBI) cases are a frequent pathology admitted in our center, referred from the ICU /Neurosurgery Departament.

The approach of the TBI pathology in our hospital's Rehabilitation unit consists in physicians (physical medicine and rehabilitation, neurology, pediatrics, anesthesiology, psychiatry, endocrinology) and therapists' (physiotherapy, occupational therapy, speech and language therapy, electrotherapy) assessment. The rehabilitation program includes examination, treatment and follow up, using human resources and modern high technology with the purpose of achieving early standing, neurosensory stimulation, cognitive stimulation, deglutition recovery and motor function recovery.

Materials and Methods. The rehabilitation program consists in modern tools of active and passive stimulation of motor function, cognitive and neurosensory stimulation, spasticity decrement. An important role in achieving the above mentioned is also played by ultrasound guided botulinum toxin intramuscular administration.

After standing is obtained and the patient is able to perform autonomous walk, gait is evaluated through a precise and objective assessment and follow up tool which is the gait analysis.

Results. The majority of the severe TBI cases (more than 80%) recover from the vegetative state, improving the motor function and cognitive state, but most of them have secondary neurological impairment. 20-30 % of cases have been fully recovered. 10-20 % develop post traumatic epilepsy.

Conclusions. Multidisciplinary approach is a key element in managing TBI patients with mild/severe neurological impairment, and can only back up the nowadays results regarding improving the quality of life of these patients, using human resources but also robotic rehabilitation devices.

P5 Kinesitherapy Impact On Rehabilitative Outcomes In Spinal Muscular Atrophy Nusinersen Treated Patients

A. Mirea^{1,2}, L. Padure^{1,2}, M.C. Leanca², G.I. Marinescu², B. Preda², C. Sporea², T. Spiricu¹, G. Onose^{1,3}



Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.P5> P Vol.11, No.3, September 2020 p: P5

1. University of Medicine and Pharmacy "Carol Davila", Bucharest, Romania

2. Teaching Emergency Hospital "Bagdasar-Arseni", Bucharest, Romania

3. National Clinical Centre for Children Neurorehabilitation "Dr. Nicolae Robanescu", Bucharest, Romania

Abstract.

Introduction. Spinal muscular atrophy (SMA) is a degenerative disease with recessive autosomal transmission, which affects motor neurons in the anterior cords' corn (1), often those in the brainstem, too, thus leading in time to their apoptosis with loss of muscle mass and motor deficit. Taxonomically, there are five types of SMA: 0, I, II, III and IV (2). The first 4 have the onset in the childhood, whereas type IV, usually starts in adulthood. It is important to apply, as soon as possible, the medication dedicated to this disease - i.e. Nusinersenum (3), (acronymed) Zolgensma (4) and standards of care which include, aside nutrition, respiratory management, psychotherapy, as a main therapeutic kind of intervention: kinesitherapy. It is well known that this disease will lead to muscle retractions if the patients are not correctly assessed and treat. It is important to use kinesitherapy, at least once a day, every day. This will maintain muscle tonicity, combat stiffness and, together with specific pharmacotherapy, will help improve motor status.

Methods. We included 37 SMA patients (aged 0-17 years): 12 with type I, 20 with type II and 5 with type III. Every case was assessed 3 times (at the beginning of Nusinersen treatment, the 2nd time at 2 months after Nusinersen initiation and the 3rd evaluation after 6 months since the first one). The patients with type I were assessed on The Children's Hospital of Philadelphia Infant Test of Neuromuscular Disorders - CHOP INTEND (5) and the patients with type II and III were tested using Hammersmith Functional Motor Scale Extended - HFMSE (6).

The primary data collected have been processed, using Microsoft Excel and SPSS v.24. There have been calculated the effect size, then for type II and III we used Kolmogorov-Smirnov (7) test for populations' normality T-test (8) and Mann-Whitney Test (9) for statistical analysis.

This study has been approved by the ethics' commission of the NCCN "Dr. Nicolae Robanescu", No 843/29.01.2020.

Results. We found a statistically significant increase ($p < 0,001$) of the above-mentioned scores in type II and type III patients that had kinesitherapy every day, associated to the administration of Nusinersen during the period that we observed, compared to those who received only Nusinersen.

In type I, because only one patient did not kinesitherapy, the statistical analysis available consisted of percentual calculated effect size: increase ranging 4-21% (average effect size=13%) between the 1st and the 2nd assessment and ranging 15-55% (average effect size=31%) between the 1st and the 3rd evaluation in patients who had associated kinesitherapy. The only patient who didn't associate kinesitherapy had an effect size increase of only 3% between the 1st and the 2nd assay and of 7% between the 1st and the 3rd evaluation.

The best motor functions improvement was observed in patients with type I, compared – difference statistically significant ($p = 0,001$) - to those with type II or type III (considered together for better statistical power), being treated with Nusinersen and benefitting on kinesitherapy, too.

Conclusion. Physical therapy is very useful, associated with Nusinersen therapy, being thus an essential part of SMA treatment.

P6 - From Psychiatrist to Neurologist in the Outpatient at The National University Hospital For Children Neurorehabilitation „Dr Nicolae Robanescu”

M.C. LEANCA¹, C. ADAM¹, L. PADURE^{1,2}

Corresponding author: M.C. LEANCA, Email: mada_mada332@yahoo.com

1. National University Hospital for Children Neurorehabilitation “Dr. Nicolae Robanescu”, Bucharest, Romania
2. University of Medicine and Pharmacy “Carol Davila”, Bucharest, Romania

Abstract

Introduction. In Romania, since 1996 child neuropsychiatry has been divided into pediatric neurology and pediatric psychiatry so that there are two different medical specialties. Most of the outpatient children need these two specialties so that in the National Center for Children Neurorehabilitation "Dr. Nicolae Robanescu" there is a pediatric psychiatry office and also a pediatric neurology office.

Materials and methods. We will present cases that were initially addressed to the pediatric psychiatry office with psychiatric disturbances (delay in language acquisition, hyperkinetic disorder, autism spectrum disorder, depression). The psychiatrist sends these children to interdisciplinary consultation in pediatric neurology because it is necessary to exclude a neurological cause of these psychiatric pathologies. We will also present cases in which neurological pathology (cerebral palsy that associates comorbidities, the most common epilepsy) is intricate with psychiatric symptoms and requires specialized evaluation.

Results. The patients sent by the psychiatrist had obvious epileptiform discharges and even a detailed history of epileptic seizures, so antiepileptic treatment was also associated. Neurological patients with psychiatric symptoms required antipsychotic medication and cognitive behavioral therapies.

Conclusions. The existence of the multidisciplinary team is necessary in order to make a correct diagnosis and a permanent monitoring of the patients. In the ambulatory of our center there are specialized medical doctor and modern equipment so that a complex intervention program is carried out to increase the quality of patients' lives.

P7 Exercise training compared to sedentary versus obstructive ventilatory dysfunction patients

C.D. Nistro-Cseppento¹, L. Lazar¹, F. Cioară¹, F. Marcu¹, N. Pașcalău¹, C. Bochiș², D. C. Iovanovici²

delia_cseppento@yahoo.com

1 Faculty of Medicine and Pharmacy Oradea,
2 The Faculty of Medicine V. Babes Timișoara

Abstract.

Introduction. Both sedentary lifestyles, through the complications it favors (muscle hypotrophy, obesity, cardiovascular disease and diabetes), as well as respiratory diseases reduce the effort capacity, which we can evaluate by the walking test, introduced in 1960 by Kenneth H. Cooper.

Material and method. We evaluated 20 patients, divided into 2 groups: 10 patients with chronic obstructive bronchitis, stage II-III, respectively 10 sedentary patients, with degenerative pathology stage I-II who underwent outpatient treatment in the Clinical Hospital "Avram Iancu" Oradea, for a period for 10 days. For the evaluation of the exercise training we used the 6 minutes test and the Borg scale applied before and after the treatment. They were measured: BP, HR, SaO₂, distance traveled and degree of dyspnea. The patients followed a recovery program, each 40 minutes / day, 10 days and as a method of increasing the training to the effort we used the field treatment 4 km / h 30 minutes, daily.

Results. The mean age of the patients in the first group was 52.2 years, of the second group 54.3 years. The average of the evaluated parameters are presented in the table below.

Conclusions. The average distance traveled by sedentary patients increases by 10%, and in the group with COPD the distance increases by 8%.

Test	at the beginning of the study, before the 6 min test		at the beginning of the study after the 6 min test		At the end of the study, before the 6 min test		At the end of the study after the 6 min test	
PARAMETER	sedentary	Patient with obstructive ventilatory dysfunction	sedentary	Patient with obstructive ventilatory dysfunction	sedentary	Patient with obstructive ventilatory dysfunction	sedentary	Patient with obstructive ventilatory dysfunction
BP	132/80	143/85	146/77	152/89	148/88	160/95	146/77	152/89
HR	68	78	75	90	68	78	75	90
Sa O ₂	95	93	92	91	95	93	92	91
Borg	4	5	5	7	4	7	3	6

P8 Current issues regarding the role of nutraceuticals in the management of osteoarthritis

Andreea-Raluca HANGAN, Gabriela DOGARU



*“Iuliu Hațieganu” University of Medicine and Pharmacy Cluj-Napoca,
Clinical Rehabilitation Hospital Cluj-Napoca*

Abstract.

Introduction: Arthrosis, also termed osteoarthritis, is the most prevalent form of arthritis, finally evolving towards disability. The objectives of treatment in arthrosis are only partially met by the current therapeutic armamentarium. Current medication does not have a disease-modifying effect and frequently generates adverse effects that limit its therapeutic use, especially in the case of elderly patients, who have many associated comorbidities. In this context, the interest of the public and of research has focused on a new category of substances, isolated from foods, plants or animal products, which are aimed at meeting pharmaceutical requirements, bringing the benefit of minimal side reactions.

Objectives: The aim of this presentation is to answer the question “What nutraceuticals have accumulated scientific evidence regarding the treatment of patients with arthrosis?”

Material and method: The data were collected from the PubMed electronic database, and only recent articles published after 2016, with scientific relevance to the aim of the paper were selected. The retrieved studies provided information about the following nutraceuticals: avocado-soybean unsaponifiable extract, boswellic acids, capsaicin, curcumin, ginger, polyphenols, polyunsaturated and monounsaturated fatty acids, black cumin oil, cannabidiol, garlic, bromelain, devil’s claw, rosehip extract.

Results: The anti-inflammatory and antioxidant effect of the active substances extracted from foods and plants largely explains their action on the decrease of the pain component and the improvement of functionality, being similar to that of NSAIDs, but with a better safety profile. Regarding the disease-modifying effect, this was found only in the case of the avocado-soybean unsaponifiable extract. The molecular targets on which these compounds act begin to be known.

P9 Functional electrical stimulation in patients with paraparesis

Bumbea Ana Maria, Borcan Madalina, Caimac Danut, Traistaru Rodica,
Rogoveanu Otilia

Corresponding author: Ana Maria Bumbea, E-mail: anamariabumbea@yahoo.com

Abstract.

Introduction

Functional electrical stimulation (FES) is a new acquisition in neurological disease with motor disabilities.

Material and method:

We included in study 5 patients with paraparesis determinate by different causes: spinal cord injury, multiple sclerosis, and meningioma. The patients were evaluated functional by ASIA score and 6MWD initial and at the end of the study. The patients included in our study started by level Frankel C. We applied FES in lower limb for 30 minutes daily, in quadriceps and tibialis anterioris bilateral. The entire rehabilitation program was for 14 days.

Results:

Patients that used this type of therapy improve their walking and standing and ASIA score increase with an average of 10.3.

Conclusions:

This new therapy improves standing and gait in a shorter time compared with classical therapy applied in this category of patients.

P10 The revival of the traditions of health creative tourism in the Dniester-Prut-Danube region

Anatolie BACIU², Vasile FEDĂȘ², Ion MEREUȚA², Constantin
IONESCU-TÎRGOVIȘTE¹, Simona CARNICIU¹

1-Prof Dr NC Paulescu National Institute of Diabetes, Nutrition and Metabolic Diseases, Bucharest, Romania

2-Institute of Physiology and Sanocreatology, Kishinev, Republic of Moldova;

Abstract.

Introduction

The main part of the circadian activity people spend their lives sitting indoors, surrounded by artificial environment. Urbanization of settlements based on ultra-high density of buildings and traffic, the destruction of the natural landscape, green spaces and ponds are implemented. The purpose consists of the development of sanocreatoriums (centers for health creation, disease prevention and rehabilitation). The main objective of practically implemented The Health Creation Program is to provide, as much as possible, a more diverse type of training, rehabilitation and comfortable recreation.

Materials and Methods

Aerobic training (swimming in different styles, a set of exercises in water) is introduced into the planned set of exercises. We strictly take into account the intensity of physical training sessions classified as moderate and highly intense in accordance with their oxygen consumption indicators in relation to the maximum oxygen consumption (70-80-90% VO₂max). We tested the response of some groups of skeletal muscles to physical exertion using the MES 9000 musculoskeletal testing system (Myotronics-Noromed Inc., USA). Pulse oximetry (pulse oximeter PULSOX-300i, KONICA MINOLTA) was used as a non-invasive method for monitoring the degree of saturation of arterial blood with oxygen.

Results*

The first principle elaborated for The Health Creation Program is to ensure free access to the natural landscape enriched with greenery (forest, park) and endowed with the necessary infrastructure. We have outlined several principles for improving the comfort and aesthetics of the rural zone. Architectural solutions based on the design of houses built along the banks of the river. The second principle consists of systematic exercises (physical, mental and emotional). The combination of aerobic with resistance anaerobic physical training and proprioceptive exercises manifested an induction of tissue plasticity. Proprioceptive exercises performed in the aquatic environment especially ensured the reduction of the gravitational load on the joints and facilitated consolidation of sensory-motor integration.

P11 - Stabilometry a Means of Evaluation and Treatment in Static Disorders in Children - By Activating the Postural Tonic System

Mihai AVRAM^{1,2}, Liliana PADURE^{1,2}, Gelu ONOSE^{1,3}

Corresponding author: Mihai AVRAM, E-mail: mihaiavram86@gmail.com

1. University of Medicine and Pharmacy "Carol Davila", Bucharest, Romania
2. National Teaching Centre for Children Neuro-psycho-motor Rehabilitation "Dr. N. Robanescu", Bucharest, Romania
3. Teaching Emergency Hospital "Bagdasar-Arseni", Bucharest, Romania

Abstract

Introduction. Static disorders in children are accentuated today for many reasons.

Materials and Methods. Through this study I have followed during 2 years 13 children between the ages of 5-13 years, in which we increased the evaluation and the clinical recovery through the intervention of the stabilometry following the sensors of COP (center of pressure) and ROM (range of motion) that generated real-time postural parameters - head deviation in the anterior-posterior and mid-lateral plane, trunk deviation in the anterior-posterior and mid-lateral plane, COP deviation (pressure center) in the anterior-posterior and mid-lateral plane. - as an assessment and recovery tool in spinal static deviations.

We performed anthropometric tests to quantify the results obtained before and at the end of the therapeutic program: thoracic perimeter, thoracic elasticity, chin-sternum index, finger-soil distance, Cobb angle..

Results. All the children made the contribution of the recuperative apparatus intervention - following and correcting the postural axis and maintaining it - obtaining the general isometry and a motor engram of the corrected posture.

Conclusions. I learned that the child's participation - through awareness - in the correct posture, is much improved when visualizing and following the vertical axis of the body.

The evolution of the parameters used in this study: it confirms the efficiency of the stabilometry in a percentage of over 90%.

P12 EVALUATION OF THE ANTINOCICEPTIVE AND ANTI-INFLAMMATORY ACTIVITIES OF HESPERIDIN AND ITS INCLUSION COMPOUNDS IN MICE

Andreia Corciovă, Bianca Ivănescu, Daniela Carmen Ababei, Ana-Flavia Burlec,
Veronica Bild



“Grigore T. Popa” University of Medicine and Pharmacy, Faculty of Pharmacy, Iași, Romania

Abstract.

Introduction

This study aims to evaluate the antinociceptive activity of hesperidin (HES) and its inclusion compounds with beta-cyclodextrin (HES- β CD) and hydroxypropyl-beta-cyclodextrin (HES-HP- β CD) on inflammatory and non-inflammatory nociception models, as well as the anti-inflammatory action.

Materials and Methods

For these experiments, we employed nociception models using thermal stimulus (hot plate and tail immersion tests, $t = 52.5^{\circ}\text{C}$; 30, 60 and 90 minutes testing), chemical stimulus (Zymosan-induced abdominal constriction response test, using distinct lots and testing at 60, 90 and 120 minutes after administration of samples) and pressure stimulus (Randall Sellito test) and an inflammation model for the evaluation of inflammatory edema by Plethysmometer test. Groups of 6-10 Swiss mice / lot were used, receiving by oral administration suspended substances (HES and inclusion compounds) in 0.1% CMC-Na. The doses were administered in geometric progression.

All experiments were conducted in strict conformity with the specific regulations approved by "Grigore T. Popa" University of Medicine and Pharmacy Iași, European bioethical regulations (Directive 2010/63/EU) and International Association for the Study of Pain regulations.

Results

HES showed antinociceptive and anti-inflammatory activities on all studied models for a 50 % activity level. The analysis of the obtained ED_{50} values indicates a higher potency for the non-inflammatory nociception models (using thermal stimulus) for the 90-minute test and a comparable potency between the inflammatory nociception models and the inflammatory edema inhibition test.

The inclusion compounds presented different actions for the same activity level. HES- β CD has a higher potency in thermal stimulation models at 60 minutes, comparable potency observed in inflammatory nociception models and higher potency in the inflammatory edema inhibition test. HES-HP- β CD did not show antinociceptive action on thermal stimulation models. The analysis of the ED_{50} values obtained in inflammatory nociception models and in the inflammatory edema test demonstrates superior and comparable potency.

Conclusions

The HES- β CD inclusion compound exhibited antinociceptive action predominantly on experimental non-inflammatory nociception models, while HES-HP- β CD exhibited anti-inflammatory and antinociceptive activities predominantly in inflammatory nociception models.

P13 The role of personalized kinetic program in the recovery of post bimalleolar fracture of the ankle

Iustina Condurache¹, Catalin Ionite¹, Mariana Rotariu^{1*}

Corresponding author Mariana Rotariu, E-mail address: rotariu29@yahoo.com

¹University of Medicine and Pharmacy „Grigore T. Popa”, Street Constantin Noica, Iași,

Abstract.

Introduction

The paper highlights the importance of customizing the kinetic recovery program used in the recovery of the post-bimalleolar fracture of the ankle. During the research work, both the techniques used and the methods applied to recover the functional balance are presented.

Material and method

During the study, thirtieth patients with bimalleolar fractures operated were monitored. They were evaluated functionally post-operatively, during the recovery program and at the end of it. The recovery program was made up composed of walking exercises focusing on the following parameters: walking, assisted walking, walking with support, standing, climbing and descending the stairs, going up, down stairs.

Results

Both during the recovery program and at the end of it, different results were observed between the patients monitored. Those who followed the initially established kinetic program, showed a better evolution compared to those who did not exercise the recommended movements regularly.

Conclusions

Potential complications that may occur in the case of a bimalleolar fractures can be avoided after correct pre- and post-operative evaluation and by using an individualized and personalized recovery method for each patient's needs. Also, an essential condition is a good collaboration between the patient-physiotherapist-orthopedic surgeon, so that complications and relapses can be avoided.

Keywords: ankle fracture, physiotherapeutic treatment, evaluation

P14 ORTHOPEDIC TREATMENT IN NEUROMUSCULAR SCOLIOOSIS - CLINICAL CASE -

I.L. TIRIPA¹, R. MANSOUR¹, I. BRANEA¹, I. GEORGESCU²,
M.C. LEANCA², L. PADURE^{2,3}, GELU ONOSE^{3,4}, A. MIREA^{2,3}



DOAJ
DIRECTORY OF
OPEN ACCESS
JOURNALS



Balneo Research Journal DOI: <http://dx.doi.org/10.12680/balneo.2020.346.P14> P Vol.11, No.3, September 2020 p: P14

1. SRH Kilinkum, Karlsbad-Langensteinbach, Germany

2. National University Hospital for Children Neurorehabilitation "Dr. Nicolae Robanescu", Bucharest, Romania

3. University of Medicine and Pharmacy "Carol Davila", Bucharest, Romania

4. Teaching Emergency Hospital "Bagdasar-Arseni"

Abstract.

Introduction. In neuromuscular disorders, as a result of muscle strength decrease, there is the risk of developing scoliosis. Considering the impossibility of ensuring the correct and constant application of the conservative treatment, the appearance and evolution of scoliosis are independent of it. Therefore, wearing a corset will not prevent the development of neuromuscular scoliosis.

Material and Methods. A 14-year-old male patient was diagnosed with spinal muscular atrophy (SMA) type II and had indications for wearing a corset. The patient's compliance with the conservative treatment and the evolution of scoliosis in time were not monitored. Therefore, the surgical intervention was inefficiently timed. Presented in our center with Cobb angle turaco-lumbar scoliosis more than 150 degrees, was rapidly oriented to the department of spinal surgery with the indication of surgical correction.

In view of the comorbidities (SMA, respiratory insufficiency), the dorsal approach was chosen for spinal correction. Given the collapsing spine, with marked vertebrae rotations, pelvic oblique and marked curvature stiffness, the correction could only be partial.

The goal was not a complete correction, but basin horizontalization, restoration of an optimal sagittal profile, balance of the column and body, respectively (and not least) the fusion.

Dorsal correction was performed with instrumentation from the T2 level to the ilium bone with posterior spondylodesis and Ponte osteotomies in apex curvatures.

Results. Following the spinal surgery, performed in the clinic SRH Klinikum Karlsbad-Langensteinbach, the patient regains his ability to sit independently, without external lateral support, thus contributing to improving his quality of life and avoiding the accentuation of the restrictive respiratory insufficiency due to the marked deformities.

Conclusion. In order to obtain best results, it is necessary to know the ideal moment for the application of all therapeutic measures, including the surgical intervention. Patients must be carefully monitored for the most indicated moment of scoliosis sanction..

P15 Efficiency of botulinum toxin treatment in hemiplegic patient in upper limb, combined with kinetotherapy

Borcan Madalina, Bumbea Ana Maria

Corresponding author: Ana Maria Bumbea, E-mail: anamariabumbea@yahoo.com

Abstract.

Introduction:

The high degree of spasticity causes a significant impairment of the functionality of the upper limb. In this paper, our aim is to evaluate the efficacy of botulinum toxin therapy alone and in combination with kinetotherapy on upper limb spasticity in stroke patients.

Material and methods:

Our study included 30 stroke patients, which we followed for a period of one year and were divided into two equal batches. Patients in the first group benefited from botulinum toxin treatment at every three months, and those in group two benefited from botulinum toxin therapy, a three-month administration combined with kinetic therapy. All patients ranged in age from 50 to 70 years. All have undergone specific and appropriate drug treatment. The evaluation was initially performed at the first administration of botulinum toxin, one week after and every 3 months after the start of treatment, following the degree of spasticity according to the modified Ashworth scale and Franchey scale.

Results:

Patients in the first group had a minimal reduction in spasticity by 15%, and those in the second group were able to significantly improve, the status starting with a spasticity with a modified Ashworth score of 3.8 and reaching 2.8. The score on the Franchey scale showed significant improvements in group two, the first group had a steady evolution in the first month, only at the last evaluation showed an improvement with an average of 20%, compared to 35% as presented by group two.

Conclusions:

Botulin toxin therapy has proven useful in combating spasticity in the upper limb in post stroke patients. By combining with the specific kinetic programs the improvement of the functional status proved on specific scales is obtained.

P16 - AICARDI GOUTIERES TYPE 2 SYNDROME – SPASTIC CEREBRAL PALSY PHENOTYPE –

M.C. LEANCA¹, L. PADURE^{1,2}

1. National University Hospital for Children Neurorehabilitation “Dr. Nicolae Robanescu”, Bucharest, Romania
2. University of Medicine and Pharmacy “Carol Davila”, Bucharest, Romania

Abstract.

Introduction. Aicardi-Goutières syndrome (AGS) is a rare genetic autoinflammatory disorder, affecting brain and skin. Onset occurs within the first few days or months of life with severe, subacute encephalopathy (feeding problems, irritability and psychomotor regression or delay) associated with epilepsy, chilblain skin lesions on the extremities and episodes of aseptic febrile illness.

Material and Method. We report a 3 years old female patient with normal pregnancy and delivery, normal neuropsychomotor development who presented clear developmental regression after age of 11-12 months when performed an cerebral MRI with sedation. He had subacute encephalopathy and loss of acquired skills (no head control, no more sitting). The cerebral MRI shows extensive degeneration of white matter hypomyelination with cerebral atrophy without basal ganglia involvement. Neurological examination shows pyramidal signs (spasticity, brisk deep tendon and Babinski sign), axial hypotonia, extrapyramidal symptoms (abnormal eye movement, dystonic postures of the upper limbs). After this episode the diagnosis of the patient was spastic cerebral palsy.

Results: The investigation performed in this patient was leukodystrophy and leukoencephalopathy panel. The results in this case were: RNASEH2B c.529G>A, p.(Ala177Thr) which is pathogenic. Biallelic pathogenic variants in RNASEH2B gene cause autosomal recessive Aicardi Goutières syndrome type 2 (AGS2).

Conclusion: For the positive diagnosis in the case of cerebral palsy it is important to know the history of the disease, the evolution (with regression in our case) and brain imaging findings. AGS2 involving the c.529G>A allele is likely under-diagnosed and easily mistaken for spastic cerebral palsy. Early recognition influences reproductive decisions and may allow for current and future therapeutic interventions targeting the damaging effects of CNS autoinflammation.

P17 - THE ASCENT AND DECLINE OF A GREAT BALNEOLOGICAL RESORT: PUCIOASA

Doroteea Teoibas-Serban¹, Liviu Iordache¹, Dan Blendea^{1,2}

Corresponding author: doroteeteoibas@yahoo.com

1. Clinical Regional Emergency Hospital Ilfov, Bucharest Romania

2. "Titu Maiorescu" University, Bucharest Romania

Abstract.

Introduction: Pucioasa is one of the greater and sadly, almost forgotten balneological resort of Romania. Known since the 18th century, where it was discovered a record of this area on the Austrian map in 1791 with sulphurous streams, the healing waters of the "Pe Pucioasa" hill enters the therapeutic balneological circle when the first water analysis occurred – 1821-1828 by Dr. Trangot von Schobel. In 1878, Ion Ghica, a prominent figure in Romania at that time initiated the exploitation of 14 wells from the 30 known streams of sulphurous and ferruginous waters, thus obtaining enough healing mineral water for a capacity of 60 beds of the balneological establishment. Since 1841, the Resort developed, transformed into a Rehabilitation Clinic (1969) and the number of patients treated there increased from 20 in the beginning to 1000 patient per day. Many of the patients included foreign elite society members who came regularly to benefit from the waters' healing properties, both external and internal cures, setting Pucioasa on a high level of not only balneology treatment, but also of balneological tourism.

Materials and methods: Studying local industrializations and water analysis, we concluded that there were many factors that contributed to the decline of this great and international renowned balneological resort. The first wrong step in this direction was made when building and extending de gypsum carrier, the peek being between 1970 and 1975, when the industrial forging process made the sulphurous streams to migrate, and the waters from the wells diminished in its sulphur and iron concentration. Another possible factor for the decline can be the modernisation of the medical world, development of anti-inflammatory drugs and modern medical equipment which reduced the need for the elite society to come a long distance for the balneological treatment.

Results: Whichever of the reasons, the once prosperous Balneological Resort of Pucioasa fell into an unknown, unimpressive place, known and frequented only by the locals. The Rehabilitation Clinic still has 60 beds, which are occupied to the maximum each month, it still prospers on a local level, but lost its glory from almost a century ago.

Conclusions: The Romanian general population and the government must take an interest to one of the many once prosperous balneological resorts in order to revive the national treasure of Romania which is balneology, which many of the developed European countries only wish that they can possess.

P18 - REHABILITATION LIMITATIONS ON POST-SURGERY KNEE AND HIP PROSTESIS IN ELDERLY PATIENTS

Doroteea Teoibas-Serban¹, Ioana Albu¹, Anca Adam¹, Iolanda Panaitiu¹, Cezara Mihailov¹, Matei Rebecnuc¹, Liviu, Iordache¹, Dan Blendea^{1,2}

Corresponding author: doroteeteoibas@yahoo.com

1. Clinical Regional Emergency Hospital Ilfov, Bucharest Romania
2. "Titu Maiorescu" University, Bucharest Romania

Abstract.

Introduction: Knee and hip surgery in elderly patients increased in the last years due to the Romanians' Ministry of Health aiding programs. After the orthopaedic surgical treatment of these patients, the general approach is to send them to the rehabilitation unit as soon as possible. Though rehabilitation procedures specific for this type of pathology immediately post-surgery exist, there are some limitations in this process.

Materials and method: There are a number of things which a health-care provider must consider when approaching prosthetic hip/knee elderly patients:

1. Elderly patients, especially females, in most of the cases have osteoporosis or osteopenia which can delay the osteosynthesis process and thus, prolong the bedrest period.
2. Patients which are confined to bedrest or non-movement, must take anticoagulant treatment to prevent thrombosis, they have post-surgery local inflammation and pain, and we can't prescribe anti-inflammatory medication due to risk of haemorrhage.
3. Contraindication to use physiotherapy to relieve pain because of the metallic material of the prosthesis.
4. The cardio-respiratory complications which can occur during the bedrest period in elderly patients.
5. The need to collaborate constantly with the orthopaedic surgeon to get multiple rehabilitation recommendation document in order to have multiple hospital admissions for the same patient in a year in order to make the patient gain complete motor function.

Results: Although kinesiotherapy made great progresses in the area of improving muscle strength and mass although the patient is confined to bedrest, we have to admit that if the osteosynthesis process is prolonged, the results are delayed and the window for complications to occur is wide opened.

Conclusions: We will continue this general list of limitations with a clinical trial, obtaining statistic results on the majority of them in order to improve the rehabilitation process of these patients.

P19 - THE IMPORTANCE OF PHYSIOTHERAPY IN COMA STAGE PATIENTS



Dora V. SZAKACS (POPOVICI)

E- Mail: popovici.dora@yahoo.com



Balneo Research Journal

DOI: <http://dx.doi.org/10.12680/balneo.2020.346.P19>

P Vol.11, No.3, September 2020 p: P19

" Iuliu Hatieganu" University of Medicine and Pharmacy Cluj-Napoca

Abstract.

Introduction

Traumatic Brain Injury (TBI), is an important public health problem and leading cause of injury, death and disability in worldwide. The TBI can cause long-term physical disability and the neurological impairments such as motor function (coordination, balance, walking, hand function, speech) and sensory loss - are important sequels that affect the quality of life.

Objectives

The physical therapy rehabilitation needs to identify these impairments and help the person to achieve the maximum degree of return to their previous level of functioning. Thus, the physiotherapist plays a central role in leading, coordinating and providing a continuum of care and services over the course of the patient's recovery. On the rehabilitation process, first the physiotherapist needs to identify the physical impairments which may be directly related to the brain injury or secondary to concomitant orthopedic or spinal cord injury.

Material and method

While people are ill in the intense care unit, they lose weight (almost 2% of their muscle mass per day during their illness). This means muscles get weaker, which can result in severe physical disability. Rebuilding these muscles takes time and in some cases can take more than a year. If people are immobile for some time, their joints may become stiff. To help them recover muscle strength, physiotherapists help them with exercises to restore their mobility.

Physiotherapy is very important considering most of the patients from intensive care unit - the progress they made daily with the support physiotherapists. This ranged from moving arms and legs, gripping, walking with a Zimmer frame and crutches, taking their first step alone to being able to walk across the ward and, finally, up and down stairs.

Conclusions

Physical exercise can help maintain or improve strength in the muscles not affected by MND, and maintain flexibility in muscles that are affected. It can help prevent stiffness in the joints. Physiotherapy may also help people with difficulties to clear their chests and maintain lung capacity at a normal level.

Bibliography

- Bratu, M.; " Communication and counseling in physiotherapy"; University Ed. Bucharest; Romania; 2013.
Dragan, C.F.; " Methodology and techniques of physiotherapy"; National Ed. Bucharest; Romania; 2018.
F. Plas; E. Hagron; " Active kinetic therapy. Therapeutic exercises"; Ed. Polirom; Bucharest; Romania; 2001.
Khan F.; Baguley IJ.; Cameron ID; " Rehabilitation after traumatic brain injury"; California; DOOR; 2003.

P20 - The right anticoagulation drug for post-stroke patients.

Claudiu Elisei Tanase², Sorina Mierlan², Mădălina Codruța Verenca^{1,2}

Corresponding author: Claudiu Elisei Tănase, E-mail: tanaseclaudiumd@gmail.com

1. Clinical Emergency Hospital for Children "Sf.Ioan" , Department Rehabilitation , Galati, Romania
2. "Dunarea de Jos" University, Galati, Romania

Abstract.

Introduction: Patients that suffered a stroke are subjects of rehabilitation in order to retrain to their own maximal physical, psychological, social, and vocational potential, consistent with physiologic and environmental limitations. The literature offers us the possibility to engage the patient in early intensive exercise therapy even within 24 hours since the symptom onset. We as rehabilitation physicians have to take under observation the right OAC drugs and the doses that are administered to the patient. Oral anticoagulation can be frequently associated with anaemia, and if it is as a result of bleeding, due to the high dosage that usually leads to reduction or a discontinuation of the treatment which will result in a high risk of a secondary stroke or thrombo-embolism.

Methods: The study is an analytic and statistic one that followed the evolution of patients under treatment for 4 months, October 2019 – January 2020. We included patients that have had been treated for ischemic or haemorrhagic stroke.

Results: The data that we procured as a result of the study, proved that we don't have enough information to be certain of the right OAC for patients after stroke. While the NOAC have better results there is still high risk of anaemia due to chronic bleeding, or another ischemic stroke due to the low INR values.

Conclusion: OAC is a very important part of the rehabilitation for stroke patients. Even with the NOAC which are supposed to be superior, we run the risk of a reoccurring stroke especially on patients who do not check their INR values periodically, and the physicians attitude towards those values which may vary from reducing the dosage to the discontinuation of the treatment because of scare of a internal bleeding. That resulting in increasing the risk of a thromboembolism or ischemic stroke. The information at hand is not enough to draw a conclusion but it should serve as a warning.

Key words: stroke, rehabilitation, OAC

Societatea Română de Medicină Fizică, de Recuperare și Balneoclimatologie (SRMFRB)

Congresul Național de Medicină Fizică, Recuperare și Balneologie din România / Romanian Congress of Physical Medicine and Rehabilitation & Balneology

2 - 5 Septembrie 2020 **România** Zoom Congres online

Logos and Affiliations:

- UNIVERSITATEA DE MEDICINĂ ȘI FARMACIE GRIGORE T. POPA IAȘI
- UNIVERSITATEA DE MEDICINĂ ȘI FARMACIE IULIU HATIEGANU CLUJ-NAPOCA
- ARB (Asociația Română de Balneologie)
- RoSCoS (The Romanian Spinal Cord Society)
- RoSNeRa (The Romanian Society for NeuroRehabilitation)
- BALNEO RESEARCH / BALNEO RESEARCH JOURNAL

<http://srmfrb.ro> <http://bioclima.ro>

Asociația Română de Balneologie (ARB)

Manuscript Requested Quality:

- Correct page numbers and spelling in the document.
- Checking text and page numbers in table of contents.
- Checking and Ensuring tables, figures, references, etc. cited in text
- Checking lists, paragraphs, figures, etc., numbered or lettered consecutively.
- Ensuring that there are no duplicate tables and figure titles
- Checking hyperlinks to references.
- Reviewing sentences for spelling and grammatical mistakes.
- Checking style, size, and typeface for headings, titles, bullets etc.
- Checking of Insertion of appropriate page breaks
- Ensuring consistent justification for text, callouts, cautions, warnings etc.
- Choosing correct size and layout of pages.
- Ensuring consistent use of capitalization and spelling.
- Applying proper numbering mechanics in the article.
- Checking format for bibliographic references, i.e. according to any of Citation Style.
- Using punctuation consistently.



Romanian Congress of Physical Medicine, Rehabilitation & Balneology 02-05 September 2020



SOCIETATEA ROMANA
DE MEDICINA
FIZICA
DE RECUPERARE
SI BALNEOCLIMATOLOGIE

Scientific Partners



The Romanian Society for NeuroRehabilitation
(acronym: RoSNeRa)



The Romanian Spinal Cord Society
(acronym: RoSCoS)



UNIVERSITATEA DE MEDICINĂ ȘI FARMACIE
GRIGORE T. POPA IAȘI



UMF
UNIVERSITATEA DE
MEDICINĂ ȘI FARMACIE
IULIU HAȚIEGANU
CLUJ-NAPOCA



UNIVERSITATEA DE
MEDICINA SI FARMACIE
DIN CRAIOVA



ROMÂNIA



CONSILIUL JUDEȚULUI GALATI

Media Partners:

BALNEO
RESEARCH

BALNEO RESEARCH JOURNAL

English Edition

eISSN 2069-7619 pISSN 2069-7597

ROMANIAN ASSOCIATION OF BALNEOLOGY

