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OUTPATIENT BALNEOLOGICAL TREATMENTS FOR MUSCULOSKELETAL DISEASES

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Abstract

Introduction: Balneological treatment procedures include balneotherapy (passive immersion of the body in mineral/thermal water), peloid therapy/mud therapy (therapeutic applications of medical peloids or muds on human body), hydropinotherapy (drinking cures of mineral water), mineral water inhalation therapy (inhalation of mineral water aerosols) and hydrotherapy (tap water passive immersion or aquatic exercise in tap water). These modalities have traditionally been derived in spa resorts and usually applied to the patients who travelled to those resorts during their stay at the spa facility/hotel.

Materials and method: The efficacy and safety of these balneological treatments when they are applied at spa/health resorts for a number of musculoskeletal diseases have been relatively well studied in randomized controlled trials. And the reported results mainly indicate the beneficial effects and good safety profile of balneotherapy and/or mud therapy in patients with musculoskeletal diseases; however, the availability of these treatments only at spa resorts where the natural origin of mineral water and peloid is, found limits and restricts the widespread use of these treatments despite promising evidence. To overcome this challenge, innovative approaches have been explored to provide such balneological treatments outside of the traditional settings for patients who would benefit from but could not afford this kind of treatment. Hydrotherapy (as tap water immersion) and peloidotherapy or mineral mud pack therapy (clay artificially mixed with mineral water) are provided in our university clinic setting as ambulatory care; however, the evidence on effectiveness of this type of hydrotherapy and peloidotherapy applications with an outpatient basis allowing the patients to continue their daily routine is limited. Interestingly these new therapeutic options are totally reimbursed by the social healthcare insurance system in Turkey. The rationality here is based on the clinical evidence from studies evaluating spa therapy regimens (balneotherapy and/or mud therapy at health resorts) that require travelling and staying at resorts leading to change in environmental/social milieu but increasing the expenses.

Results: With the aim to report the results of original studies testing the efficacy and effectiveness of this new type of balneological treatment approaches, we included two recently published publications from our department; an RCT comparing two different balneological treatment regimens (intermittent or continuous hydrotherapy plus peloidotherapy sessions) for knee osteoarthritis yielding comparable results; improvements in pain and function for both groups and a retrospective study of outpatient balneological treatment consisting of hydrotherapy and mud therapy in elderly patients with osteoarthritis providing initial evidence for the potential therapeutic effects and safety of such treatment.

Conclusions: Considering these promising results from the two initial clinical studies evaluating this new type of balneological treatment approach - combination of hydrotherapy and peloidotherapy- which can be given in routine outpatient practice at all possible settings/clinics, further clinical trials are needed to test the effects of such treatment in patients with different rheumatic and musculoskeletal diseases.

MECHATRONIC/ ROBOTIC STATIONARY DEVICES FOR UPPER LIMB NEUROMOTOR DEFICITS' REHABILITATION CURRENTLY USED IN CLINICAL SETTINGS

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Abstract

Introduction

Robotic rehabilitation is a growing field as both interest and implementation in current clinical use of mechatronic (including stationary – especially appropriate for employment in medical settings) devices, designated to the approach of neuromotor deficits in the upper – but lower, as well – limb.

Materials and methods

Being rather new and still quite rare the inner avail of necessary related complex and costly apparatus, we have carried out in this work, a presentation of the own expertise: based on literature review for the specific adult pathology and respectively, emphasizing the practical use of some advanced such devices in a children rehabilitation clinic.

Results

We have structured this endeavor on the following topics: background, main targeted pathology, main evaluation tools, therapeutic goals, main stationary mechatronic/ robotic medical devices to approach upper limb neuromotor deficits' rehabilitation, together with examples of their clinical usefulness.

Conclusions

In order to settle best possible interventions, it is important to focus on correct identification of all issues' priorities in each patient, considering also personal and environmental factors. Analyzing body function and structure, activity and level of participation helps to elaborate/ implement the therapeutic/ rehabilitative action plan. Thus, the complex capabilities of such mechatronic/ robotic stationary devices can be optimally valorized in adequate dedicated methodologies, including with avoiding possible inconveniences, inevitably afferent to any advanced medical intervention.

REAL-LIFE EFFECTIVENESS OF SPA THERAPY IN RHEUMATIC AND MUSCULOSKELETAL DISEASES: A RETROSPECTIVE STUDY OF 819 PATIENTS

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Abstract

Introduction: The objective of this study is to determine the use and efficacy of spa therapy in patients with a wide spectrum of rheumatic and musculoskeletal diseases under real-life clinical practice circumstances.

Materials and methods: In this retrospective observational study at the Medical Ecology and Hydroclimatology Department of Istanbul Faculty of Medicine, the records of all adult patients with rheumatic and musculoskeletal diseases who were prescribed a spa therapy in various health resorts in Turkey between 2002 and 2012 were analyzed. Patients sojourned to and stayed at a health resort and followed a usual 2-week course of spa therapy. The patients were examined within a week before and after the spa therapy at the department by the physicians and outcome measures were pain intensity (visual analog scale, VAS), patient's general evaluation (VAS), physician's general evaluation (VAS), Health Assessment Questionnaire (HAQ), Lequesne's Functional Index (LFI), Western Ontario and McMaster Universities Index (WOMAC), Waddell Index (WI), Neck Pain and Disability Scale (NPDS), Shoulder Disability Questionnaire (SDQ), Fibromyalgia Impact Questionnaire (FIQ), and Beck's Depression Inventory (BDI). In total, 819 patients were included in the analysis. The diagnoses were 536 osteoarthritis; 115 fibromyalgia; 50 lumbar disc herniation; 34 cervical disc herniation; 23 nonspecific low back pains; 22 ankylosing spondylitis; 16 rheumatoid arthritis; 9 rotator cuff tendinitis; and 14 other conditions/diseases including scoliosis, stenosing flexor tenosynovitis, congenital hip dislocation in adult, Behçet's disease, de Quervain tendinopathy, psoriatic arthritis, osteoporosis, fracture rehabilitation, and diffuse idiopathic skeletal hyperostosis.

Results: Statistically significant decrease in pain scores was found in all patients except hip osteoarthritis ($p = 0.063$) and rheumatoid arthritis ($p = 0.134$) subgroups; and statistically significant improvement in function in all patients except hip osteoarthritis ($p = 0.068$), rheumatoid arthritis ($p = 0.111$), and rotator cuff tendinitis ($p = 0.078$) subgroups. In daily clinical practice, spa therapy is prescribed and practiced mainly for osteoarthritis, then fibromyalgia, lumbar/ cervical disc herniation, and nonspecific low back pain; and less for ankylosing spondylitis, rheumatoid arthritis, and rotator cuff tendinitis.

Conclusions: The study results suggest that real-life spa therapy may be effective in a variety of rheumatic and musculoskeletal diseases by improving pain and function.

METHODS AND RESULTS – THERAPEUTICAL REHABILITATIVE APPROACHES OF A PATIENT WITH A BEHAVIOUR AND PSYCHO-COGNITIVE STATUS (MINIMALLY RESPONSIVE STATE) AFTER A SEVERE TRAUMATIC BRAIN INJURY (TBI), IN A POLYTRAUMATIC CONTEXT -CASE REPORT-

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Abstract

Introduction: Traumatic brain injury (TBI) is a major cause of death and disability.”TBI is a non-degenerative, non-congenital insult to the brain, from an external mechanical force, possibly leading to permanent or temporary impairments of cognitive/ diminished or altered state of consciousness, physical, and psycho-social functions”. Depending on the severity of the lesions and the particularity of the case, the clinical picture differs. This paper presents - with the approval of the Bioethics Committee of TEHBA, (No.9181/11.04.2018) - an extremely complex case of psycho-cognitive status (minimally responsive state) and behavioral (marked psychomotor agitation) after a severe TBI, (GCS = 4 points in the emergency room) in a polytraumatic context, as well as the favorable outcome of this condition, due to its therapeutic-rehabilitation management.

Materials and Methods: A 20-year-old female patient was admitted to our Neuromuscular Rehabilitation Clinic’s Division with the diagnosis of psycho-cognitive rough status in marked post-severe TBI (GCS = 4 at presentation in the emergency room) and Cervical SCI (Spinal Cord Injury) AIS/ Frankel (D) with impairment from C3 level down , after a fracture of the right C3 articular massive, with unilateral rotational dislocation of C3-C4 (conservatively treated), multiple cranial fractures - frontal-parietal right - CT confirmed, hemorrhage under arachnoid - current CT : enlargement of pericardial fluid spaces, diffuse cerebral ,the right front centimetric gap - all without neurosurgery indication, the scalp frontal-parietal (sutured cured), limb fractures on the right hand side (osteosynthesis with humerus and tibia metal stems, right and left ilio-ischio-pubian fractures (conservatively treated) - all after road car accident on 24.01.2018 (anamnestic - passenger-) -. The patient was clinically and functionally evaluated, according to the standardized protocols implemented in our clinic, through assessment scales (MMSE-Mini Mental State Examination-, GOS, MRS-Modifiend Rankin Scale-, FIM, AIS/ Frankel, FAC, QoL-Quality of Life-) and also para-clinically, including CT scans.

Results: Following a complex neuro-recovery program developed by a multidisciplinary team made of doctors, kinesio-therapists, middle and allied health personnel, the patient had an extremely good evolution (during a short period of time) - attested on the scales and also - on a psycho-cognitive and behavioral level - . From psychomotor agitation and unrecognizable words, she began to have a suitable behavior for a patient in this condition, an understandable language and an increased capacity to stay in the wheelchair for a longer period of time (because her lower limb fractures still do not permit walking).

Conclusions: This case represents an exhaustive example of a multidisciplinary and particular neuro-rehabilitative therapy approach with both clinical and scientific impact.

METABOLIC DISORDERS OF DIABETES AND OBESITY AND OSTEO-ARTICULAR PATHOLOGY

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Abstract

Introduction: Osteoarthritic manifestations (OA) of obesity are frequent among obesity and aggravate with aging, being one of the main causes of disability and impairment of the quality of life of these patients.

Material and method: From a historical point of view, the relationship between obesity and OA was reduced to mechanical changes due to overweight and particularly affected the knee and hip joint. The association between obesity and osteo-articular pathology, which is worth mentioning, is sufficient, but I mention: „Le tissu sous synovial est aussi le siège d’une surcharge de graisse, qui pousse, dans la cavité articulaire, des prolongements susceptibles de gêner les mouvements. [N.C Paulesco : Traité de Physiologie Médicale, capitoulul II Phénomènes de Nutrition, pag 342-356, editia a 3a, Editura Academiei Romane, 2010]”.

Results: With the increase in obesity prevalence, an increase in OA was observed in joints without pressure due to obesity, such as the hand or temporomandibular joint. Recent meta-analyses bring to the fore the changes of obesity-osteoarthritis paradigms, associating metabolic disorders in obesity, leptin level and consecutive inflammation with joint disorders. Diabetes mellitus is another negative prognostic factor of OA progression. A mechanism involved seems to be the glycation of cartilage resident proteins especially those exhibiting low turnover such as type II collagen following hyperglycemia, but also the inflammatory process associated with the syndrome.

Conclusions: Obesity and diabetes are risk factors for femortibial gonarthrosis, osteoporosis, especially in women, arthritis, gout, lumbar and lower limb root pain. The multidisciplinary approach of these associated pathologies is important for the long-term prognosis of osteo-articular pathologies, especially as a 5-10 kg decrease in weight improves the risk and symptomatology of gonarthrosis.

STIFF-PERSON SYNDROME - CASE PRESENTATION



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Abstract

Introduction: Stiff-person syndrome (SPS), formerly known as “stiff-man syndrome”, is a rare neuro-immunological disease, the understanding and diagnosis of which have greatly advanced with the identification of disease-associated autoantibodies. It is associated with high levels of antibodies against glutamic acid decarboxylase (GAD Ab), a protein in inhibitory nerve cells that is involved in the synthesis of the main inhibitory neurotransmitter called gamma-aminobutyric acid (GABA). GABA helps control muscle movement and prevent hyper-excitability within the brain and spine. The symptoms of SPS may develop when the immune system mistakenly attacks certain nerve cells (neurons) that produce GAD, leading to a deficiency of GABA in the body.

SPS may be associated with other autoimmune disorders, more frequently diabetes. Less commonly, affected individuals may also develop inflammation of the thyroid (thyroiditis), pernicious anemia and vitiligo.

Material and methods: We present the case of 35 years old woman, diagnosed with stiff-person syndrome from 2017. The symptomatology had an insidious onset with walking difficulties (gait abnormalities), muscle pain and rigidity in the inferior limb, and dysarthria. In addition to muscular stiffness, she also developed muscle spasms, which occurred spontaneously or in response to various triggering events. In 2014 she was diagnosed with Latent Autoimmune Diabetes in Adults. The patient was anamnestic (history of the illness), clinically and para-clinically evaluated.

Results and discussions: Taking into account the anamnestic and clinical information, also the presence of GAD antibodies and the associated autoimmunity (diabetes and recently diagnosed thyroiditis), we can say that we are dealing with one of the rare cases of stiff-man syndrome.

Conclusions: SPS is a rare disorder and it is very difficult to diagnose. With an early recognition of the disease and prompt treatment, the quality of life of SPS patients can be improved. Stiffness and spasms interfere with the ability of these patients to fully mobilize affected joints, and they are at risk of developing further complications. Physical therapy may have a role in the management of this disease, as these patients need to be taught how to properly stretch and maintain joint mobility as a lifelong commitment.

Although currently there is no cure for SPS, symptoms can be treated by augmenting spinal cord γ -aminobutyric acid-mediated activity with benzodiazepines and baclofen. Plasmapheresis and intravenous immunoglobulin have been used to diminish the underlying autoimmune response. Though the first line of drugs for SPS is benzodiazepines and baclofen, their dose-related adverse effects are of major concern.

KEY-WORDS: *stiff-person syndrome, GAD antibodies, muscle spasms, neuro-immunological disease*

FROM NEUROBIOLOGY TO EVIDENCE BASED MEDICINE CONCEPTS IN NEUROREHABILITATION AFTER STROKE

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Abstract

Introduction: Over the last decades, therapeutic approaches for stroke have significantly evolved and improved as a consequence of the implementation of modern stroke units, improvement of general medical care and more structured and early administered rehabilitation schemes.

Thrombolytic therapy with rt-PA (recombinant tissue plasminogen activator) has been developed and a number of clinical trials have recently confirmed the effectiveness of thrombectomy to be better than rtPA alone.

Materials and method: Except thrombolytic therapy and thrombectomy there is still no widely accepted therapy for acute ischemic stroke. Current data shows that even if advanced procedures can be used, 60% of stroke patients die or remain with a certain level of deficit. As it is widely accepted that immobilization-related complications cause over 50% of stroke patients' deaths, rehabilitation plays an important role in stroke care. It is getting clearer that multimodal drugs may play an important role in pharmacological support of neurorehabilitation after stroke.

Results: The results of recently published large and well-controlled clinical studies show a positive effect of Cerebrolysin on neurological recovery after acute ischemic stroke.

The newly published CARS study assessed the efficacy and safety of Cerebrolysin in combination with a standardized rehabilitation program. The primary study endpoint was the Action Research Arm Test (ARAT) at day 90, assessing upper-limb motor functions. Cerebrolysin was administered for 21 days, starting within 48-72 hours after ischemic stroke.

The study showed a statistically significant group difference in the upper-limb motor function (ARAT) at day 90 – primary end point. Cerebrolysin was also superior over placebo in most of the secondary endpoints like the NIHSS, Barthel Index and mRS. Also, at day 90, patients treated with Cerebrolysin showed less depressive symptoms and better quality of life. In addition, the most important measure for early benefit, the NIHSS at day 21, showed statistically significant superiority of Cerebrolysin. Analysis of the safety parameters did not show any clinically statistical significant differences between the treatment groups. The trial indicates that early combination of rehabilitation with a multimodal medication of neuroprotective and recovery properties is a valid therapeutic approach.

Conclusions: Furthermore, CARS 1 and CARS 2 meta-analysis provides evidence that Cerebrolysin has a beneficial effect on motor function recovery in early rehabilitation patients after stroke. All pre-planned primary meta-analytic results were statistically significant.

OSTEOARTICULAR MANIFESTATIONS IN NEUROLOGICAL DISEASES



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Abstract

Introduction: Osteoarticular manifestations frequently accompany neurological pathology, both at early and late stages, requiring multidisciplinary collaboration for the correct diagnosis and treatment of the disease, thus avoiding disabling complications and improving the quality of the patient's life.

Objectives: Arthropathies of nervous origin typically imply functional impotence characterized by hypertrophic or atrophic, constructive or destructive bone and joint changes, often arthropathy being the initial sign of neurological impairment, therefore it is necessary to study these manifestations and their impact on patients with neurological pathology.

Material and method: Literature survey

Results: Due to sensitivity disorders, local infusion disorders and secondary osteoporosis, fractures can appear, which are initially painless, and therefore ignored, but which result in moderate functional disorders and serious bone deformities, misalignment, dislocations, vicious callus formation and pseudo-arthritis.

Joint injuries can provide important clues for diagnosis, therefore, atrophy of the intrinsic musculature of the hand and leg with deformation of the foot form ("dog cavus") drives us towards hereditary peripheral neuropathic pain. The "hammer" toes, the fall of the planting vault ("Lisfranc joint") are characteristic features of advanced peripheral neuropathies. Peripheral motor neuropathy causes atrophy of the foot's musculature, distorting the normal leg architecture, producing instability and walking disturbances, increasing the risk of falls in these patients.

The upper limb can be affected by syringomyelia, where we have osteopathies in the scapulohumeral, elbow and radiocarpal joints. Affection of the lower limb in Tabes involves the knee joint ("the great tabetic hyper-lax knee"), the small joints of the foot (Charcot "cubic foot"), the metatarsal joint, the calcaneocuboid, etc., while the upper limb and the coxo-femoral joint are rarely affected.

Charcot neuro-arthropathy is characterized by leg joint damage, with pathological fracture and articular dislocation (frequently metatarsophalangeal) resulting in severe deformities.

Algodystrophies in Parkinson's disease, accompanied by small hand joint diseases especially in proximal metacarpophalangeal and proximal interphalangeal joints, foot osteopathy's in diabetic neuropathy, and the deformities of the hand small joints in Charcot Marie Tooth Disease are some examples of joint damage in neurological pathology.

Vertebral arthropathies occur in the advanced stages of the disease (eg Guillain Barre, diabetic neuropathy, etc.) with painless evolution, characterized by rachidial deformities such as dorsal - lumbar kyphoscoliosis, gibbosity, disappearance of lumbar lordosis, etc.

Hemiplegia is accompanied by arthropathies on the affected side, especially the upper limb, (scapulohumeral and hand joints) complicating recovery due to appearance of pain.

In **conclusion**, it is useful to note that, regardless of the type of invalidating neurological disorder, prolonged immobilizations (months, years) leads to articular and periarticular disorders manifested by joint pain, periarticular ossification as neo-formed lamellar bone tract invading the joint capsule, ligaments and periarticular muscles, ultimately forming bone bridges leading to articular ankyloses.

Key words: osteoarticular disorders, peripheral and central neurological pathology.

A COMPLEX CASE OF NEURO-MUSCULAR REHABILITATION WITH FAVORABLE EVOLUTION IN A PATIENT WITH INCOMPLETE PARAPLEGIA POST THORACIC OSTEOMYELITIS, SURGICALLY TREATED, WITH MULTIPLE PULMONARY AND RENO-VESICAL DETERMINATIONS

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Abstract

Introduction: Vertebral osteomyelitis refers to an infectious disease that affects the vertebral body, the intervertebral disk, or adjacent para-spinal tissue (2-7% of all musculoskeletal infections) and can determine severe or rather permanent sequels.

Materials and Methods: This paper presents the case of a 61-year-old obese patient, with personal antecedents of arterial hypertension and chronic obstructive bronchopneumopathy hospitalized at the Neurosurgery Clinic (NS) II of TEHBA in a critical condition, for incomplete AIS/Frankel C paraplegia with sphincter's dyscontrol and renal and respiratory failure. After complex para-clinical investigations, was discovered a T6-T7 osteomyelitis (probably with renal start point - the onset of the disease being with a urinary infection), left pleural empyema with left pleural cystic collection, emphysema bubbles in both hemi-thorax. After repeated thoracic surgery examinations, it was made a left pleural puncture and after 5 days a pleurostomy was decided with removal of 1000 ml serohematic fluid and subsequently a new incision was done, with partial evacuation, as a result of subcutaneous emphysema in the left hemi-thorax.

When the patient became hemodynamic and respiratory stable it was decided a neuro-surgical intervention with T6 discectomy. In our clinic, the patient initially followed a complex nursing program and subsequently a rehabilitation adequate program. The patient's evolution was initially severe, requiring oxygen therapy for a long time and presenting an episode of swelling with macular eruption with urticaria in the lower limbs followed by a bladder globe (with removal of 3000 ml urine, followed by fixed urinary catheterisation – possibly autonomous dysreflexia). After stabilizing the patient, her evolution was favourable with oedema and rash disappearance, with respiratory function improvement and quitting oxygen therapy. 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 neuro-muscular rehabilitation program, having a favourable evolution, with an increase in the evaluated scales scores and thus, with a final performance of walking without a support for short distances, including climbing/ descending stairs, as well as a sphincter re-education with the neurogenic bladder remission.

Conclusions: The para-clinical assessments followed by prompt thoracic- and neuro-surgery intervention, associated with complex nursing measures, with personalized rehabilitative kinesiological programs, in an obese patient with post-osteomyelitis paraplegia determined the neuro-locomotor impairment and respiratory dysfunction improvement and sphincter re-education, thus enhancing including patient's quality of life.

Key words: paraplegia, osteomyelitis, pleurostomy, neuro-muscular rehabilitation

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SUCCESSFUL REHABILITATION PROGRAM - INCLUDING MULTIMODAL STRATEGIES –OF A PATIENT WITH SPASTIC TETRAPARESIS DUE TO ANOXIC ENCEPHALOPATHY



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Abstract

Introduction: Anoxic encephalopathy is one of the hardest rehabilitation condition which can generate cognitive dysfunction and tetraparesis. The multimodal/ pleiotropic therapeutical approach by influencing endogenous defense activity, a fundamental biological processes of neurogenesis, neuroprotection, neuroplasticity and neurotrophicity and counteracting neurogenic inflammation and the secondary phenomenoms according to the “tooth paste theory” combined with a specific rehabilitation program could be a benefic therapeutical association.¹⁻²

Matherials and methods: A 42 years old patient without any previous medical conditions was admitted in our Neural-Muscular clinic division with cognitive impairment and spastic tetraparesis after anoxic encephalopathy. The case report presentation was approved by TEHBA Bioethics Commission (No.9181/11.April.2018). The patient was clinically, para-clinically and functionally assessed according to the standardized protocols implemented in our clinic through the assessment scales (AIS, FIM, QoL-Quality of Life, Asworth, Penn, FAC, WISCI II).

Results: The combined and complex rehabilitation program led in this specific case to a complete cognition remission and substancial locomotor regaining: at discharge the patients having independence of walking.

Conclusions: The modern ambivalent approach of spastic tetraparesis and cognitive impairment emerging from anoxic encephalopathy could be a suceful therapeutical management leading in some cases to a complete recovery.

Key words: Anoxic encephalopathy, spastic tetraparesis, rehabilitation program

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COMPLEX NEURO-MUSCULAR FAVORABLE REHABILITATION PROGRAM OF A PATIENT WITH POLITRAUMA INCLUDING SPINAL CORD INJURY AND MULTIPLE BONE FRACTURES



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Abstract

Introduction: Polytrauma which include spinal cord injuries but are associated with other traumatic events such as limb fractures, generate through their complexity the necessity of a thorough neuro-muscular rehabilitation programme with a long-term aim of reflecting the improvement of the patient's quality of life. [1-5]

Materials and Methods: This paper presents the case of a 43-year- old patient (having the The Teaching Emergency Hospital "Bagdasar-Arseni", TEHBA, Bioethics Committee approval no 9181/11.04.2018), who is hospitalized in our Neuro-muscular Clinic presenting incomplete AIS / Frankel C tetraplegia with C4 neurological level and neurogenic bladder and bowel. Also she associated multiple fractures such as: left scapular fractures, right humerus fracture (surgically stabilized), pelvic fractures, right fibular head fracture without displacement. This polytrauma was caused by a car accident (pedestrian 9.11.2017). At admission the patient had severe motor and functional impairment and 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 neuro-muscular rehabilitation programme, having a favourable evolution, therefore the patient reaches incomplete AIS / Frankel D tetraplegia with an increase in the evaluated scales scores and thus, with a final performance of walking for short distances with a supporting frame, as well as a sphincter re-education with the neurogenic bladder remission.

Conclusions: Based on the collaboration with orthopedic and surgeon fellows the PRM physician developed a complex rehabilitation programme leading to the re-expression of locomotion function, sphincterian control recovery, selfcare ability, all of the mentioned factors improving the patient's quality of life.

Keywords: rehabilitation, traumatic brain injury, bone fractures, politrauma

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EARLY INTERVENTION IN ATAXIC DYSARTHRIA. LONGITUDINAL CASE STUDY

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Abstract

Introduction: This paper focuses on the importance of early intervention on language development in children with ataxic dysarthria, taking into account that they face various breathing, articulation, phonetic, resonance and suprasegmentally difficulties. Coordination disorders, difficulties in walking, abundant salivation, low muscle tone and jerky speech are also known disorders met in ataxic dysarthria.

All these disorders have a negative impact on the quality of life of the individuals diagnosed with this condition, so early intervention is necessary.

Material and methods: This paper aims to bring forward an approach based on developing the suprasegmentally component of communication, the abilities of immediate imitation, focused attention, establishing visual contact, developing the phono articulatory apparatus mobility using classical exercises as well as orofacial stimulation (Morales Technique and using special instruments – Sensory therapy instruments, Z-vibe – an instrument with vibrations), developing breathing, articulation, phonetic and resonance skills, developing active vocabulary, taking into account the final aim, developing a functional and efficient communication.

Results: This approach has very interesting results, greatly reducing the discrepancy between chronological age and the level of language development.

Conclusions: In conclusion, early intervention has a very important influence on the developmental characteristics of children with ataxic dysarthria due to the fact that it has an impact on the quality of life of a child and his/her family.

Keywords: Dysarthria, Ataxic Dysarthria, Early Intervention,

COMPLEX REHABILITATION AND THERAPEUTIC CARE INVOLVING A POLYTRAUMATIZED PATIENT WITH TRAUMATIC BRAIN INJURY, CERVICAL SPINAL CORD INJURY AND MULTIPLE ASSOCIATED LESIONS - CASE REPORT

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Abstract

Introduction: Neurotrauma within polytrauma, defined as “an ensemble of troubles due to many lesions with traumatic origin, among which, at least one, threatens patient’s life”¹, is the subject matter of the present scientific paper – approved by the ethics commission of SCUBA, no. 9181, of 11.04.2018 – which encompasses the complex therapeutic and rehabilitation management of a polytraumatized patient with severe traumatic brain injury and cervical spinal cord injury, that led to serious functional consequences – cognitive, motor, sensitive, autonomic.

Material and Methods: A 45 years-old, male, patient, suffered severe traumatic neurological injuries and multiple bone fractures and visceral contusions after a traffic accident (driver). The stabilized patient is admitted in our Clinic’s Division for the following reasons: cognition impairment (minimally conscious state), neuromotor impairment in the form of right hemiplegia, dysphagia, neurogenic bladder and gut and eschars.

Results: After a serialized, two-year, multidisciplinary rehabilitation approach, aggravated by many complications, the patient has a favorable outcome, both cognitive – in the present moment he can communicate relatively satisfying by pronouncing words correctly, without motor speech disorders - and motor: he can maintain the sitting posture for long periods of time and walk several steps with support from another person. These acquisitions are confirmed by the improvement of the following evaluation scales: AIS, FIM, QoL (motor AIS-scale improved with 4 points, motor FIM-scale with 3 points, QoL-scale doubled).

Conclusions: This case represents an exhaustive example of multidisciplinary and therapeutic neuro-rehabilitation approach, with both clinical and scientific impact.

¹ EXPERTISE IN NEUROTRAUMA WITHIN POLYTRAUMAS’, COMPLEX POST-ACUTE APPROACH: Prof. ONOSE G., MD, PhD and Co.

COMPLEX THERAPEUTICAL REHABILITATION APPROACH IN THE CASE OF A POLYTRAUMA PATIENT WITH TRAUMATIC BRAIN AND SPINAL CORD INJURIES - CASE REPORT

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Abstract

Introduction: The multidisciplinary approach of polytrauma cases including traumatic brain and spinal cord injuries and the survival outcome, represents one of the greatest challenges. Not to neglect the decrease of function and the psycho-cognitive minimization sequels which are at least as important in regard to the patient's future quality of life.

Materials and methods: Under THEBA Bioethics Commission approval (9181/ 11.Apr.2018), this paper presents a case of a 28-year-old male patient with AIS/ Frankel (A) paraplegia after a spinal cord injury (SCI) with T3 level secondary to T4-T5 fracture surgically treated. SCI was associated with moderate traumatic brain injury TBI (subarachnoid haemorrhage), thoracic-abdominal contusion (left pneumothorax, hepatic trauma) and multiple fractures (sternum and costal, surgically treated), neurogenic bladder and bowel. This condition was due to a car accident, occurred on November 13, 2017.

The patient was admitted with a psycho-cognitive status, complete bilateral motor deficit in the lower limbs - paraplegia, sensitivity disorders of anaesthesia type and sphincter disorders. The patient was clinically, para-clinically and functionally assessed according to the standardized protocols implemented in our clinic through the assessment scales (AIS, FIM, QoL-Quality of Life, Asworth, Penn, FAC, and WISCI II).

Results: The patient's evolution was slow but favourable. He benefited of neurosurgical care and had thoracic surgery to extract the osteosynthesis material at the sternum. Meanwhile, he learned the technique of intermittent catheterisation. As a result of the rehabilitation program, the patient's finally reached the level of wheelchair locomotion and has a complete restored the cognitive function.

Conclusions: The multidisciplinary team approach consisting of physicians, kinesio-therapists, nurses and auxiliary healthcare personnel was the key of the patient's survival, eliminated the cognitive dysfunction and reduced as much as possible the locomotor one.

Keywords: rehabilitation, traumatic brain injury, spinal cord injury

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RECOVERY ASPECTS IN A CASE OF SIMPLE SPASTIC PARAPERESIS WITH A T11 NEUROLOGICAL LEVEL, ACUTE POSTISCHEMIA DUE TO A HEMORRHAGIC SHOCK THROUGH AN AORTO-SIGMOID FISTULA AND COMMUNICATIVE ANASTOMOTIC PSEUDOANEURYSM

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Abstract

Introduction: The pseudo aneurysm is an accumulation of blood between the muscle and the adventitia of an artery, while a genuine aneurysm is "a permanent and localized dilation which determines an increase of more than 50% in the normal diameter of the respective vessel" [1], [2]. Aneurysms are more common in the aorta and most frequently occur in male patients aged between 65-85 years, representing 1-3% of the total death causes in this group of age. [3], [4]. The aortoenteric fistula is a rare cause of massive gastrointestinal bleeding which might have catastrophic consequences due to the determined hemorrhagic shock, most of such fistulae leading to the death of the patient. [5], [6]. There may be medullar ischemia due to the massive blood loss, which may be presented through a wide range of clinical manifestations: pain, motor deficit, and sometimes the impairment of sphincter control. **Material and methods:** The paper presents the case of a 53-year old patient with common spastic paraparesis, AIS/Frankel D-E with a T11 neurologic level, acute post-ischemia due to a hemorrhagic shock (see below) – with the approval of the Bioethics Committee of "Bagdasar Arseni" Emergency Clinical Hospital, Bucharest (No.9181/11.04.2018). The patient was diagnosed in 2017 with ruptured right iliac aneurysm which required surgery. A right iliac exograft was inserted, which later became infected, thus requiring multiple surgical interventions, the patient remaining a chronic carrier of Enterococcus Faecium. Subsequently, a non-infected pseudo aneurysm appeared at the level of the right iliac blunt, followed by a surgical intervention with the resection of the aortic bifurcation and a left aortic-iliac prosthetic bypass. In January 2018, the patient presented himself with an emergency to the hospital, with a hemorrhagic shock. He was diagnosed with anastomotic pseudo aneurysm which communicated through a very long path with a fistula at the level of the sigma, showing small amounts of a periprosthetic collection with purulent aspect. Surgery is reinitiated by insertion of an axillo-bifemoral bypass and Hartman resection with colostomy. Another important element in the pathological history of the patient is operated pulmonary neoplasm with hepatic and bone metastases. The patient was clinically and functionally evaluated, according the standardized protocols implemented in our clinic, through the assessment scales (AIS, FIM, QoL-Quality of Life, Asworth, Penn, FAC, WISCI II) and also paraclinically, in order to evaluate his biological reserve and his bearing availability of the recovery program. **Results:** Following a complex neuro-recovery program developed by a multidisciplinary team made of doctors, kinesiotherapists, middle and allied health personnel, the patient presented a slowly favorable evolution (slowed down by his multiple above mentioned comorbidities) from an algo-dysfunctional point of view, with the improvement of the walking program and the increase of muscle force and individual autonomy. **Conclusions:** Although aortic aneurysms are common between ages 65-85, they can also occur at younger ages. The aortoenteric fistula is a rare cause of massive gastrointestinal bleeding, many of which lead to the death of the patient long before he comes to the doctor. Although medullar ischemia can cause paraparetic neurological deficit, it can be corrected through a complex recovery program.

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“SPAGHETTY WRIST”

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Abstract

Introduction:

Lacerations to the volar wrist surface have the potential to be severely debilitating, mainly due to the superficial location and high density of tendons, nerves and arteries in that area.

Laceration of multiple flexor tendons in zone V presents a special problem in management. Deep forearm lacerations proximal to the transverse carpal ligament typically involve multiple structures, including tendons, median and ulnar nerves, and the ulnar and radial arteries.

Materials and Methods:

Extensive volar wrist lacerations, also known as ‘spaghetti wrist’, ‘suicide wrist’ or ‘full-house wrist syndrome’ has been described extensively in the current literature, although there is no standard definition as to what constitutes a spaghetti wrist. Despite their relatively frequent occurrence in the civilian population, few data are available in the literature to classify these injuries; thus, a uniform reporting, severity of disability and prognosis are not available.

Rehabilitation of the patient with a tendon injury is a challenging process. The repaired tendon must be simultaneously protected from rupture and moved in a controlled fashion. While measures are necessary to protect the repaired structures, early controlled motion is required to enhance healing and function. Appropriate intervention at the correct phase of healing is based on an understanding of tendon and soft tissue healing and the factors that influence repair and function.

Results:

Coordination between the surgeon and the therapist is essential. Tendon injuries can profoundly affect hand function and appropriate therapy and rehabilitation are essential to preserve function to the fullest extent possible.

Conclusion:

The minimal definition of spaghetti wrist needs to be redefined comprehensively to include lacerated structures other than volar wrist structures and the classification should include all variants, so that, functional outcome studies can be conducted and reported.

EFFICIENCY AND LIMITS OF THE RECOVERY TREATMENT OF THE LUMBAR-RADICULAR PAIN SYNDROME (LRPS) OF VARIOUS AETIOLOGIES – CLINICAL STUDY –



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Abstract

Introduction: As the number of patients suffering from LRPS who requested consultations from the General Practitioner and specialty practices grew in the last years – some cases suffering from severe forms even after surgery, and the age of the applicants decreased (involving the ages from 20 to 70-80 years), I was urged, in collaboration with the recovery medicine consultants, to conduct a study regarding this category of afflictions.

Objectives: The study sets out to establish effective recovery treatment programs aiming at: reducing the intensity of pain symptomatology and the frequency of onsets, improving the lumbar spine functional capacity, reducing the number of days of temporary labour incapacity, thus accelerating the patients' social reintegration, and not lastly, finding prevention methods to reduce relapses and implicitly, the incidence of LRPS.

Material and method: The study based on clinical and statistical observation was achieved in the Medical Recovery Section of Braila County Hospital during 2017, when, out of a total number of 2157 admitted patients, 217 were diagnosed with LRPS, namely 10.06% of the total.

Within the 217 cases of LRPS, the following clinical entities have been individualized: - *lumbar-radicular syndrome* = 89 cases, namely 41.01% of the total; - *operated disc herniation* = 52 cases, namely 23.96%; - *sequelae of operated disc herniation affecting the EPS (external popliteal sciatic nerve)* = 6 cases, namely 2.76%; - *un-operated disc herniation* = 13 cases, namely 5.99%; - *MRI-diagnosed lumbar discopathy* = 8 cases, namely 3.68%; - *lumbago* = 49 cases, namely 22.58%.

The patients of the study lot had an initial and final assessment, at the discharge, by: classical clinical examination, somatoscopic assessment, muscular and articular testing, and their pain was assessed by questionnaires (Roland – Morris, Waddell and Main) and scales (VAS, ODI). All the patients were subject to the same treatment protocol namely: posturing, pain relief, relaxant physiotherapy, distal massage and analytical kinesiotherapy – Williams's program.

Results: The following have been found at the final assessments of the lot patients: *improved* = 188 (86.63%) whereby *very good results* – 126 (67.03%) and *good results* – 62 (32.97%); *stationary sequelae* = 19 (8.75%); *surgery indication* = 5 (2.31%); *aggravated* = 5 (2.31%).

Conclusions:

- The early, correct and complete assessment of the spine, of the pain and functional condition due to the consecutive disability in the patients suffering from LRPS, is an important element of the recovery program.
- The therapeutic approach of the patients suffering from LRPS must be complex and requires associated recovery means: medicines, physio kinetic and educational hygiene.
- In order to prevent relapses, postural medical education (school of the back) of the patients with predisposing professional activities, as well as their awareness regarding the need of the quarterly and biannual maintenance treatment.

Key words: LRPS, functional condition, complex recovery treatment, analytical kinesiotherapy, posturing.

THE IMPORTANCE OF THE REHABILITATION PROGRAM FOR THE ELDERLY PATIENTS DIAGNOSED WITH LOW BACK PAIN

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Abstract

Introduction: The low back pain is a major health issue for the elderly as it causes discomfort and disabilities. The elderly diagnosed with this condition have specific issues for their evaluation and treatment. The prognosis of the disease may be influenced by the old age, the existence of vertebrae fractures, the lumbar duct stenosis, the physical, psychical and cognitive changes due to the old age as well as other degenerative conditions and comorbidities such as the lack of physical activities. The objective of the study was the evaluation of the efficiency of the recovery program for the elderly diagnosed with low back pain.

Material and method: The trial was conducted for a period of 3 months and included 20 patients who were more than 60 years old diagnosed with low back pain. The inclusion criteria were: the patients 'age over 60, the consent to take part to the trial and the diagnosis of low back pain. The exclusion criteria were: the age below 60, associated comorbidities and the refusal to take part to the trial. The patients were evaluated in the beginning and in the end of the recovery treatment, and subsequently 30 days later. The aimed parameters were: the pain (measured by the analogue visual scale), the mobility (measured by the Schober index and by the LBP –Module scale), the quality of patients' life (measured by the QOL scale). The patients had pharmaceutical treatment (if it was necessary), they had an individualized program: electrical therapy (against pain and contractions), massage (sedative and relaxing) as well as kinetic therapy (kinetic techniques and the William method).

Results: At the end of the treatment, the low back pain decreased, the mobility improved, the quality of the sleep was higher, and the quality of life got better. The attained results were statistically significant.

Conclusions: The use of the individualized recovery treatment in the treatment premises and the continuity of the program at home according to the recommendations allowed the significant decrease of pain. Thus, the patients had the possibility to make movements that allowed them to be physically independent and autonomous. Moreover, the psychical mood improved, the mobility increased and the patients had a better posture.

Key words: low back pain, elderly patients, recovery, quality of life.

A METHOD FOR IDENTIFYING SUITABLE AREAS IN CLIMATOTHERAPY IN ORDER TO DIVERSIFY THE HEALTH TOURISM OFFER INSIDE OF MONTPEA TOURISM DEVELOPMENT ASSOCIATION. CASE STUDY: MOINEȘTI MUNICIPALITY

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Abstract

Introduction:

Many of Romanian health resorts do not offer to patient-tourists the possibility of climate-therapy effectuation, although the title given by Ministry of Tourism shows that this kind of resorts should also offer this type of services. Thus, this study aims to create a two phase method of suitable areas identification for climate-therapy for a Romanian tourist resort.

Materials and methods:

According to prevalent bioclimatic type, using GIS technology aspects relating to hypsometry were taken into account, slopes declivity and orientation, land use, drainage density and air quality results. The second phase consisted in measurement of climatic essential indices on areas that proved to be suitable in the first phase.

Results:

The results outlined that Moinești Municipality disposed of suitable areas for climate-therapy due to physical and climatic factors analysis, aspect that can contribute to the diversification of MONTPEA's health tourism offer.

Conclusions:

The quality and the efficiency of this method was given by the existence of numerous filters/indices that made discoverable those areas which had certain conditions for this kind of treatment effectuation.

Key words: land cure; aerotherapy; heliotherapy; bioclimate; health tourism; weighted overlay;

THE INFLUENCE OF WEATHER CONDITIONS ON PERSONS WITH RHEUMATIC DISEASES



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Abstract

Introduction: International studies confirm the hypothesis that weather changes are correlated with changes in the intensity of pain in patients with rheumatic diseases (Guedj and Weinberger, 1990; Shutty et al., 1992; Hendler et al., 1995; Jamison et al., 1995; Aikman, 1997; Gorin et al., 1999; Timmermans et al., 2014). Few studies on this subject have been conducted in Romania (Teodoreanu, 2001; Boloșiu, 2009). The main objective of this study was to analyze the perception of the influence of various weather conditions on patients with rheumatic disease.

Material and method: This was a retrospective longitudinal study. The group of analyzed subjects came from two sources: patients treated in the S.C. Tușnad S.A. Complex from the Băile Tușnad balneoclimatic resort in the period October-December 2017, on the one hand, and patients treated in the clinical service of Balneology at the Clinical Rehabilitation Hospital in Cluj-Napoca, in the period April 2017 – March 2018, on the other hand. The analysis was performed in a group of 106 persons, of which 66.0% women, 34.0% men, aged between 45 and 85 years (mean age 66.3 years). Only patients residing in Bucharest, Cluj-Napoca, Constanța, Iași and Timișoara were selected. All patients were diagnosed with degenerative rheumatic diseases including primary coxarthrosis, primary gonarthrosis, cervical-dorsal-lumbar spondylarthrosis, omarthrosis, cervical and/or lumbar discopathy, status post hip and/or knee arthroplasty after advanced coxarthrosis and gonarthrosis. The patients had associated arterial hypertension, ischemic heart disease, diabetes mellitus. The subjects were evaluated by means of a questionnaire, specially designed for this purpose. Two inquiry methods were used: the questions were asked individually on the day of the patients' arrival in the spa resort or within two-three days of hospitalization. In the case of patients from Tușnad, in order to study the adjustment of the body, the subjects were also inquired by phone immediately after the completion of treatment.

Results: The most notable results are the following: 54.7% of subjects definitely believe that their rheumatic pain is influenced by weather, and 27.4% of patients believe that their rheumatic pain is to a large extent influenced by weather. Most of the patients report that their rheumatic pain intensifies (becomes unbearable) when: temperature suddenly decreases (85.1%), moisture suddenly increases (78.2%), fog is present (59.8%), cloud cover suddenly increases (78.2%), there is torrential rain and/or storm (53.5%), there is frontal rain (46.0%), there is high wind speed (44.8%). The majority of the patients show the phenomenon of metotropism – 59.6% of patients report feeling more intense pain whenever the weather changes; most of the subjects (57.5%) report feeling changes in the weather 24 hours before, and 31.3% of subjects react 72 hours before the weather changes, which coincides with air mass changes in the upper layers of the troposphere. Regarding the adjustment of the body in the Băile Tușnad balneoclimatic resort, 41.7% of patients reported an improvement of their general health status, and 33.3% of subjects noted a worsening of their general health status within 3-4 days of their arrival in the spa resort.

Conclusions: The majority of the assessed patients consider that weather influences the intensity of their rheumatic pain, but sudden weather changes have a higher impact on pain intensity.

RESULTS OF TREATMENT OF PATIENTS WITH ARTERIAL ULCERS USING OZONE THERAPY IN THERMAL CENTER CONDITIONS.

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Abstract

Introduction: Ozone is a naturally occurring gas, the strongest disinfectant. Ozone treatment is used to treat viral, bacterial and fungal infections. This therapy can also be used to improve the supply of oxygen to the tissues. Both of these mechanisms have a beneficial effect on the healing of chronic wounds. The aim of the presented research is to evaluate the effectiveness of treatment with the use of ozone therapy of ulcers in the course of arterial and venous vascular changes.

Materials and methods: We selected a group of 20 patients with arterial ulcers, in this group there were 12 people with ischemic ulcer on the background of atherosclerotic lesions, and 8 people with venous ulcers, the mean age was $63.6 \text{ years} \pm 10.2$. The duration of atherosclerosis was on average 9.4 ± 6.2 years. The number of hypertensive patients was 25% and with ischemic heart disease 34%. In the degree of severity of ulcer according to Wagener, 66% had grade I and II, and the others had grade 3/4/5 respectively 25% / 0% / 8.3%. Duration of varicose vein disease was 9.6 ± 5.6 years and the duration of ulcer was from 3 months to 17 years. Treatment in addition to standard surgical care and antibiotic therapy included administration of ozone-oxygen mixture in intravenous form and in the form of an aerosol bath. Kinesiotherapy and physical treatments (pulsed magnetic field and laser therapy) were appropriately selected. The average duration of treatment was 46 days on average.

Results: The results of the treatment were assessed on a four-level scale: I complete recovery, II improvement with full recovery, III minor improvement, and IV no improvement. In addition, patients were evaluated for changes in metabolic control of diabetes, and lipid parameters were also evaluated.

58% of patients achieved improvement in the prognosis of recovery, in 42% a slight improvement was not observed among the subjects without improvement, the results were similar in both groups of patients. In the subjective assessment questionnaire, all patients reported improvement in reducing pain. In additional studies, the level of fibrinogen improved significantly.

Conclusions: Based on the results obtained, we conclude that ozone treatment is a valuable method of improving the results of treatment in patients with atherosclerotic ulceration. For a full assessment of the method, it is necessary to plan further randomized trials comparing treatment with ozone therapy to other reference methods of treatment on vascular ulcers.

RESULTS OF TREATMENT OF PATIENTS WITH DIABETIC FOOT ULCERS USING OZONE THERAPY IN THERMAL CENTER CONDITIONS



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Abstract

Introduction: Ozone is a naturally occurring gas, the strongest disinfectant. Ozone treatment is used to treat viral, bacterial and fungal infections. This therapy can also be used to improve the supply of oxygen to the tissues. Both of these mechanisms have a beneficial effect on the healing of chronic wounds. The aim of the presented research is to evaluate the effectiveness of treatment with ulcer therapy in the course of diabetic foot syndrome (DFS).

Materials and method: The material is a group of 26 patients with DFS, in this group there were 10 women, with the mean age of $63.6 \text{ years} \pm 10.2$. Diabetes duration was on average 14.9 ± 8.9 years. The number of patients with neuropathic, ischemic and mixed type of ulcer was 69.2%, 19.2% and 11.6%, respectively. In the degree of severity of ulcers according to Wagener scale, 50% had grade II, and another 3/4/5 respectively 19.2%/ 7.7%/ 3.8%. Treatment in addition to standard surgical care and antibiotic therapy included administration of ozone-oxygen mixture in intravenous form and in the form of an aerosol bath. Kinesiotherapy and physical treatments (pulsed magnetic field and laser therapy) were appropriately selected. The average duration of treatment was 46 days. The results of the treatment were assessed on a four-level scale: I complete recovery, II improvement with chance to full recovery, III minor improvement, and IV lack of improvement. In addition, changes in metabolic control of diabetes, and lipid parameters were also evaluated.

Results: Full recovery was achieved in 26.9% of patients in a further 15.4% improvement in the prognosis of recovery, no improvement was observed in 23.1% of patients. In the subjective evaluation questionnaire, all patients reported improvement - reducing pain and swelling. In additional studies, the statistically significant levels of total cholesterol, LDL-cholesterol, triglycerides and fibrinogen decreased.

Conclusions: Based on the obtained results, we conclude that ozone treatment is a valuable method that improves treatment outcomes in patients with diabetic foot syndrome. For the full assessment of the method, it is necessary to plan further randomized trials comparing the treatment with ozone therapy to other reference methods of treatment of diabetic foot ulcers.

OZONE THERAPY: WHY NOT?



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Abstract

Introduction:

Over 30% of the European adult population suffers from rheumatic affections, which are the most frequent chronic diseases on the continent, according to the World Health Organization (WHO). Ozone therapy is a revolutionary treatment, which has been successfully used for over sixty years in countries such as USA, Canada, Germany, Italy, Ukraine, Sweden, Spain, and others. It is widely known for its miraculous effects of healing numerous diseases.

Material and method:

The ozone generator, provided with a spectrophotometer of ultimate accuracy and precision, ensures the necessary concentration for various types of applications:

➤ SYSTEMIC:

- Autohemotherapy
- Rectal Insufflations

➤ LOCAL:

- Injectable
- Transcutaneous
- Topical

Results:

Ozone therapy is an alternative therapy which has proved to be effective in rheumatic, dermatological, cardiovascular, gynecological, orthopedic, oncological, and geriatric affections.

Conclusions:

All clinical studies show that ozone therapy is an efficient method of preventing some diseases and the complications that come with it, leading to the reduction in intensity of the acute bursts, while at the same time considerably improving the quality of life and life expectancy.

THE IMPACT ON HUMUS WATER ON PARAMETERS OF ENDOTHELIAL DYSFUNCTION IN HYPERGLYCEMIC CONDITIONS.

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Abstract

Introduction: Humus water (HW) containing humus acids with sources in Poland are originally bacteriologically pure, physically and chemically stable. Because of the physicochemical properties of humus acids of adsorption, complexity and ion exchange, they present numerous therapeutic activities. Hyperglycemia is recognized as a primal factor responsible for the vascular endothelium damage in diabetic patients and is associated with expression of adhesion molecules, such as selectin E (E-selectin) and vascular cell adhesion molecule - 1 (VCAM-1).

Material and methods: Endothelial cells (HUVEC line - Human Umbilical Vein Endothelial Cells) were cultured in accordance the standard method. The study was conducted in four groups: control group 1 – culture medium without impact of glucose and HW ; 2 - an appropriate volume of HW was added to obtain its 1% solution in the culture medium; 3- 30 mM/L glucose added to the culture medium to imitate hyperglycemic condition; 4 – glucose and HW in the medium. The cells were counted by Buerker hemocytometry. The concentration of soluble form of E-selectin and VCAM-1 in the supernatant was measured by ELISA test and analyzed per number of cells.

Results: The lowest number of HUVECs was observed in group 3 cultured under hyperglycemic conditions while the number of cells in group 4 with glucose and humus water reached the level similar to the control group. Meanwhile, the concentration of soluble form E-selectin and VCAM-1 was higher in group 3 with glucose and decreased concentration was observed with addition of HW in group 4.

Table 1. Influence of HW on number of endothelial cells and secretion of adhesion molecules. Results are presented as mean (M); standard deviation (SD); median (Me) and the inter-quartile range (IQR).

		1 Control Group	2 Group +1% HW	3 Group +30 mM/L glucose	4 Group + 30 mM/L glucose + 1% HW	p
Number of cell (Nx10 ⁵)	M	4.21	4.44	3.39	4.24	0.0062 (3 vs 4)
	SD	0.63	0.81	0.90	0.87	
E-selectin/10 ⁵	Me	0.09	0.08	0.13	0.11	0.0546
	IQR	0.08-0.11	0.06-0.13	0.09-0.16	0.07-0.17	
VCAM-1/10 ⁵	Me	0.10	0.10	0.16	0.14	0.0806
	IQR	0.07-0.23	0.09-0.48	0.12-0.22	0.10-0.41	

Conclusions: Humus water improve endothelial functions impaired by hyperglycemia conditions. It appears that the adverse effects of high glucose concentration on vascular endothelial cells may be reduced by adding of HW. The present study reveals that HW exerts important beneficial effects also by reducing the expression of adhesion molecules.

MOFETTES: CAPRICE OR UNESCO PATRIMONY?



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Abstract

Introduction: The aim of the present paper is to present why mofettes, a natural therapeutic gas which contains 80-99% carbon dioxide, free gas in the volcanic regions, have therapeutic effects in the secondary prevention of cardiovascular diseases. In Romania, the Harghita-Caliman Mountains is the main area related to carbon dioxide emanations. The natural mofettes consist in the capture of the emanated gas and its use as such for therapeutic purposes in especially equipped rooms, which allow descending gas accumulation since it is heavier than air.

Methods and results: The results from different research studies with mofettes were analysed: features, exploitation, effects and therapeutic results. The results conclude that mofettes could be a UNESCO patrimony, as they are a non-pharmacological treatment which brings vasodilating effects, increases the muscular and cerebral circulatory flow, accounting for favourable effects in the atherosclerosis with arterial peripheral and cerebral localisation, in arterial hypertension, ischemic heart diseases.

Conclusions: The mofettes therapy combined with other classical rehabilitation programmes can play an important role in cardiac prevention and rehabilitation. The mofettes with their unique effects are an argument for the thesaurus potential of Romania's balneary resorts.

DEGENERATIVE SPINE CONDITION AND OSTEOARTHRITIS TO THE ELDERLY PATIENT WITH CARDIAC DISEASE -REPORT-

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Abstract

Introduction: Degenerative spinal condition and osteoarthritis are the result of primary or secondary joint destructive phenomena and are the most common pathology experienced by a physician for medical recovery.

Material and method: The main degenerative spinal conditions are cervical and lumbar, and the peripheral are located at the hip, knee and hand. The classification in the current nomenclature recognizes the term osteoarthritis in peripheral affection. The elderly patient starts from a different status from the young patient, the performance is limited by the modified functional capacity of the elderly. The stages of old age are correlated with the deficiency in many organs and systems. Overlapping cardiac pathology adds to a malfunction. Recovery of such a patient requires an individualized program adapted to age-related disability and cardiac impairment. We present recovery programs in the context of heart disease, adapted to the elderly on specific types of degenerative joint damage.

Results: Recovery programs adapted to the elderly and the cardiac patient lead to improved functionality, increasing the quality of life and ensuring its independence. From the clinical point of view, physical therapy is aimed to reduce pain and inflammation, restoring joint mobility, increasing strength and muscle strength according to the condition presented with permanent monitoring of cardiac function. The individual and group occupational therapy is correlated with the educational level and the patient's functional deficit.

Conclusions: The therapeutic arsenal of the recovery program is limited to the elderly and the cardiac patients, the kinetic programs, the time and speed of execution require correlation with cardiac dysfunction. By applying rehabilitation programs, patient performance and quality of life are improved.

PROPOSAL FOR MODIFICATION OF THE INTERNATIONAL CLASSIFICATION OF HEALING MINERAL WATER

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Abstract

Introduction:

In Balneology, healing mineral waters are treated like pharmacological drugs, hence they should be safe and good quality, and contain optimal concentration of specific mineral components. These dates are in international classification of mineral water. This classification was established between the years 1911 and 1934. The progress in medicine and new chemical and clinical research studies have shown that some of the components of mineral water are toxic, but they are still considered a healing factors in international classifications. Other components which are considered as healing, are not absorbed through the skin and do not develop therapeutic effects. So they should not be considered specific healing components of water. The next problem is the optimal limit concentration of the therapeutic components. Application of water with very low concentration of active pharmacodynamics compounds don't allow the appropriate medical effects.

Material and method: We propose to make changes within the range of the value of the qualitative and quantitative specific therapeutic components in the international classification of healing mineral water.

Results: We presented the proposals for changes in the international classification of healing water in 2017 at FEMTEC conference. The Polish Balneological Association has established recommendations regarding the most important changes in current very old international classifications of the healing waters

Conclusion: We encourage the Romanian Balneological Association to make similar changes in the classification of your healing waters

STRUCTURAL AND ULTRASTRUCTURAL CHANGES IN EXPERIMENTALLY INDUCED ALCOHOLIC LIVER INJURY AFTER CONSUMPTION OF CARBONATED MINERAL WATER FROM BAILE TUSNAD

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Abstract

Introduction: Hepatobiliary disorders are increasing as a result of enhancement of environmental pollution, consumption of alcohol and synthetic drugs. The mineral water from spring 3 in Băile Tușnad, with a total mineral content of 3351.0 mg/l, is recommended in chronic liver diseases.

Objective: The studies aimed to assess possible changes in the liver following ethyl alcohol administration in rats, as well as to evidence anatomopathological differences between the animals that drank tap water and those that consumed Tusnad mineral water, after cessation of alcohol administration.

Material and method: The first study was performed on 25 white Wistar rats and lasted 100 days. The animals were divided into 3 groups: group I, negative control – 5 animals; group II, positive control – 6 animals; group III, experimental group – 14 animals. Group I animals were administered tap water (50-75 ml/day/animal) throughout the experiment, group II and III animals were administered 12% ethyl alcohol (12-15 ml/day/animal) during the first 70 days. Over the last 30 days of the experiment, group II animals received tap water (50-75 ml/day/animal) and group III animals received Tușnad mineral water (50-75 ml/day/animal). On day 70 of the experiment, 5 animals were euthanized (2 in group I, 1 in group II and 2 in group III), and on day 100, the remaining 20 animals were euthanized. Liver fragments in the form of 4 mm thick slices were taken from the euthanized animals for electron microscopic histological examination. In the second study, the animals drank alcohol for 70 days and water for 50 days.

Results: In group I, a negative control, the liver structure was normal. After alcohol administration, a stimulation of lipid synthesis and a reduction of the protein synthesis capacity were observed. Small necrotic areas were seen. In group II, a positive control, the action of alcohol that diminished with time and tap water consumption led to the maintenance of alcohol-induced changes, but these were reversible. The group treated with ethyl alcohol and Tușnad mineral water had a normal hepatocyte ultrastructure, with an increase in the number of lysosomes, showing the defense capacity of hepatocytes against alcohol intoxication. The second study also evidenced significant changes, which were correlated with the results of the biochemical hepatic, renal tests and of the ionogram performed.

Conclusions: These findings suggest that the mineral water from spring 3 in Băile Tușnad may have hepatoprotective properties, through its capacity to diminish the toxic effect on the liver.

THE ROLE AND THERAPEUTIC EFFECTS OF MINERAL WATERS IN THE TREATMENT OF GONARTHROSIS – A SYSTEMATIC REVIEW

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Abstract

Introduction: Gonarthrosis is a degenerative disease that affects the entire joint, causing progressive cartilage deterioration, subchondral bone changes and synovial membrane inflammation. Clinically, it is characterized by pain and joint stiffness associated with progressive functional limitation and decreased quality of life. The International Osteoarthritis Research Society has developed stratified guidelines for the non-surgical treatment of gonarthrosis, in which non-pharmacological measures include weight control by dietary changes, physical activities, cognitive behavioral psychotherapy, orthoses and walking aids, physical therapy and balneo-therapy or immersion in thermal or mineral water. Immersion in mineral or thermal water has sedative, decongestant, myorelaxant, analgesic and vasodilator effects. The aim of this study was to conduct a systematic analysis of the literature regarding the role and specific therapeutic effects of mineral elements and other chemical compounds in mineral water, as well as its derivatives, peloids.

Material and method: PubMed and Medline databases were searched for studies in the period 2011-2018, using the following key words: "spa therapy", "balneo-therapy", "gonarthrosis", "mud", "peloid", "mud treatment" combined with "randomized clinical trials", "meta-analyses". We selected 11 studies including a total number of 845 patients treated with mineral water baths or mud/peloids.

Results: Treatment with mineral waters or mud packs has beneficial effects in patients with gonarthrosis, reducing pain symptoms and significantly improving functional capacity and quality of life over a period of up to 3 months.

Conclusions: The studies show that mineral water and mud/peloid therapy is a possible therapeutic option in the treatment of gonarthrosis.

IRON METALLO BIOLOGY AND BALNEOLOGY, IMPLICATIONS IN TYPE 2 DIABETES

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Abstract

Introduction:

Iron, as a metal ion, plays an important role in biology, is essential to the metabolic function of any cell. The study highlights on aspects of the role of iron in type 2 Diabetes, and one of a “natural treatment methods” with mineral waters.

Objectives:

The main goals of the study are to review, underline and present the molecular mechanism of iron, role and position of the “trace element” through entry into the cell to control iron homeostasis, in patients with type 2 diabetes, require more considerations. According to a complex treatment, it may be demanded demonstrations that mineral waters, beyond antidiabetic drugs, in adequate doses and parameters can contribute to an equilibrium state in metabolism.

Material and methods:

Identify, compare, describe essential processes from articles, professional books, reviews, meta-analysis and describe iron cycle in organism, molecular pathways, association with type 2 diabetes with a balneological approach is a challenging subject.

Results and discussion:

Iron is one of the most widespread elements in the earth’s crust, in water could be present in Fe²⁺ (ferrous) or Fe³⁺ (ferric) states. Waters which include especially increased iron, represent the ferrous forms. The dissolved ferrous iron can be oxidized to ferric state by atmospheric oxygen (near the surface of the ground) related to pH and redox-potential conditions.

Iron plays an essential role as a cofactor in various metabolic processes like oxygen or electron transport, DNA synthesis. It is a redox-active transitional metal, disturbances in iron homeostasis are very common, overload status however may contribute to the production of reactive oxygen species. Type 2 diabetes is a systemic disease that can affect any organ in the body. Studies described association between the iron and glucose metabolism, furthermore pancreatic beta cells are sensitive to the oxidative stress. As an essential nutrient, iron can be obtained from dietary sources. A meta-analysis summarize, that hem-iron (found in hemoglobin and myoglobin and is derived only from animal products) was mainly associated with an increase in the risk of type 2 diabetes, and dietary non-hem iron (derivate from both plant and animal products) was not associated with risk of the disease. Mineral waters also are important “metal-vehicles”, if concentrations of iron in drinking water are approximately 0.3 mg/l, that would contribute about 0.6 mg to the daily intake. Mentioned by a guideline, in a spring water present a total dissolved mineral content of 500 mg/l, the taste threshold value of iron was observe 0.12 mg/l. In anaerobic groundwater, iron concentrations can be usually 0.5-10 mg/l, but concentration up to 50 mg/l can sometimes be found (an example, Unirea Spring from Vatra Dornei 49.7 mg/l).

Conclusion:

Affected iron metabolism, both deficiency or overload conduct to tissue damage, contribute in diabetes pathogenesis. However, creno-therapy with iron content (pharmacodynamic effect based on Fe²⁺ form) generally combined with carbon dioxide or bicarbonate anion in adequate parameters could be recommend in type 2 diabetes.

TECHIRGHIOL SAPROPELIC MUD – FOUNTAIN OF YOUTH



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Abstract

Introduction: The Techirghiol sapropelic mud is one of the most important terapeutical factors of the Techirghiol areal, studied over a long period of time by many specialists, the balneary therapy performed in the „Sanatoriul Balnear si de Recuperare Techirghiol” is a scientific evidence-based therapy and not an empirical one.

The studying of certain techniques for obtaining an aging process without comorbidities that affect the quality of life of the aged patient represents a current preoccupation of specialist from different areas of activity, including those of the „Balneary and Recovery Sanatorium Techirghiol”.

Materials and Methods: Prospective cohort clinical study, conducted within „ Sanatoriul Balnear si de Recuperare Techirghiol”. There were carried out hormonal determination in four moments of time: at the moment of hospitalization, at discharge, at one month after discharge and four months after discharge.

Results: The evaluation of changes in the hypothalamic-pituitary-adrenal hormonal axis presents a major importance in the studies performed on the sapropelic mud of Techirghiol. Results involving the aging process, under peloidotherapy, were found within the GH-IGF-1 axis, results that concord with endocrinology specialty literature. Bio-hormonal modifications obtained are differentiated depending the sapropelic mud application: thermoneutral application or contrasting factors application

Conclusions: The present study opens a very important pathway for the modern balneary area, showing the importance of Techirghiol sapropelic mud for obtaining a „successful” aging process.

THE TREATMENT OF PAIN IN DEGENERATIVE JOINT DISEASES WITH THE HELP OF SULFUROUS THERMAL MINERAL WATER IMMERSION



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Abstract

Introduction: Romania has a third of the whole balnear reserves in Europe. The therapeutic effect of sulfurous thermal mineral waters is mentioned from 1872 when they were more empirically used. In the present, they are highly standard and scientifically used in medical practition for pain caused by degenerative joint conditions.

Materials and methods: The clinical testing of these waters was made on an 1145 patients study group between March 2015 and November 2017. The pain of these patients was caused by diseases such as gonarthrosis, coxarthrosis and discopathy. The age average was 65 years old. To evaluate the subjective experience of pain, we used the numeric evaluation scale from 0 to 10, where 0 represents total lack of pain and 10 represents an insupportable excruciating pain.

720 patients had associated comorbidities: 41 cases of chronic hepatopathologies, 79 cases of ulcer disease, 90 cases of gallbladder ailments, 110 cases of renal lithiasis, 130 cases of arterial hypertension, 51 cases of chronic ischemic heart disease and 219 cases of diabetes, obesity and metabolic syndrome.

The sulfur baths were aplied daily, 20 minutes per session, with the waters' temperature between 36 and 37. All patients' received kinesio-therapy for muscle toning and joint mobility improvement. Patients with associated gastric, hepatic and renal lithiasis conditions received diuresis creno-therapy in digestive or homeopathic doses, according to the laboratory and para-clinically examinations.

Results: 945 patients asserted significant improvement of pain and joint mobility. 123 patients had a mild persisting pain and were prescribed antalgic treatment. 77 patients were recommended orthopedic examination - for prosthesis and neurosurgery examination. The proportion of placebo-reactive patients was variable.

Conclusions:

1. Sulfurous thermal water immersion successfully passed the harsh test of time. These procedures have to be manipulated with fair judgment and under strict medical supervision.
2. The two pain therapy types (naturist and pharmacologic) do not exclude one another, in the contrary, they complete each other with success, realizing thus a „global therapy”.

THE OSTEOPOROSIS IN THE AERONAUTICAL PERSONNEL: MYTH OR REALITY?

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Abstract

Introduction: BMD measured using the DXA method is significantly low in the aeronautical personnel and the average T-Score indicates the occurrence of osteoporosis as far as the non-aeronautical personnel is concerned, this value is within normal limits. Osteoporosis is highly probable to occur and even to aggravate if more risk factors are involved. Whereas some of these factors cannot be controlled (age, sex, race, height, endocrine disorders or osteoporosis in antecedents), other risk factors can be modified according to the kind of lifestyle that we embrace (weight, physical exercises, etc.) or the type of diet that we follow (consumption of tobacco, alcohol, coffee, dairy products, sweets, meat and meat products). In the present study I have attempted to show that the occurrence of osteoporosis in the aeronautical personnel mainly stems from the typical flight activities and not from factors usually associated with this disease.

Material and method: Both, military and civil aeronautical personnel that performs the annual medical checkup at the National Institute of Aeronautics and Spatial Medicine "Gl. Dr. Av. Victor Anastasiu" in Bucharest were selected according the inclusion and exclusion criteria. Thus, the group under scrutiny here consists of 51 individuals. At the same time, we have investigated a witness group of 34 non-aeronautical individuals.

Results: By means of statistical methods, the present study proposes a comparative analysis of the two groups, evaluating 23 risk factors that contribute to osteoporosis: biological factors (age and sex); anthropometric factors (weight and height); lifestyle and nutrition (consumption of tobacco, alcohol, coffee, dairy products, sweets, meat and meat products, and medication that can contribute to osteoporosis); physical activities, endocrine disorders and a family history of fractures or osteoporosis. This evaluation will be performed in order to find out whether there are significant differences between the aeronautical personnel and the non-aeronautical personnel, which might explain the changes in bone mineral density. We have also analyzed the aeronautical personnel based on specific factors (the number of flight hours, years of service devoted to the aeronautical activity, and the aircraft type involved in this process). We shall later correlate this analysis with the frequency of osteoporosis in order to decide whether they are interdependent.

Conclusions: Out of 23 risk factors that specifically contribute to the development of osteoporosis, only 3 factors (alcohol consumption, dairy consumption, and lumbar pain) made the difference between the two groups from a statistical point of view. These differences do not modify the scientific quality of future research study results because:

- ✎ it is generally acknowledged that alcohol consumption might develop osteoporosis, but the difference between the two groups is inverted, that is those who consume less alcohol (the aeronautical group) have a diminished BMD;
- ✎ dairy consumption meets the requirements: it is diminished in the aeronautical personnel but it alone cannot take the responsibility of high BMD differences;
- ✎ frequent and intense lumbar pain in the aeronautical personnel are explained by the specificity of the daily professional activities; they are not related to osteoporosis because:
- ⇒ osteoporosis is painless;
- ⇒ those who present lumbar pain do not have fractures and do not feel any vertebral pressure, which might have represented the only possible connection between osteoporosis and pain.

Considering that the study of the risk factors proved that the groups are homogenous and compatible from a statistical point of view, without presenting differences in risk factors, the differences of BMD are due to that specific feature which distinguishes the two groups and which is known as the **flight activity**.

GEOAGIU BAI RESORT - OUR EXPERIENCE OF MEDICAL REHABILITATION TREATMENT



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Abstract

Introduction: Along with Herculane and Calan, Geoagiu-Bai enjoys the inalienable privilege of being one of the oldest spas in the country, dating from the Roman colonization period, when the resort was named Termae Dodonae. In the opinion of the specialists, however, the therapeutic use of the sources here is even older, that is, from the era before the colonization, when the locals used thermos-mineral water that abundantly springs up at Germisara, considered to be toponymical geto-dac ("germ" = hot, hot; "= Water, spring).

Material and method: The natural therapeutic factors of Geoagiu-Bai resort are: bicarbonate, calcic, magnesium, low-radioactive, hypotonic, hypothermic (29-33 ° C) mineral waters with a total mineralization of 1.1-1.4 g / l; sedative climate bio-climate and ioduros-feruginous peat mud. These natural therapeutic factors are used in the treatment of complex pathologies of the locomotor system (degenerative, inflammatory rheumatism, post-traumatic and postoperative pathology), respiratory, dermatological, neurological and dysmetabolic disorders. The treatment bases in the resort are using therapeutic procedures to supplement the therapy with natural climate factors such as electrotherapy, hydrotherapy, hydro-kinesio-therapy, thermotherapy, magneto-therapy, laser therapy, inhalotherapy and massage.

The duration of treatment course at the Germisara Hotel Resort & Spa is 5 and 10 days, respectively, during which patients benefit from a complex medical treatment including the combination of natural cure and electrotherapy procedures, laser therapy, magneto-therapy, hydro-kinesio-therapy and massage.

Results: Following treatment, we gained an increase in joint mobility and a significant pain relief especially in the degenerative, posttraumatic and postoperative pathology of the locomotor system.

Conclusions: Combining natural climate factors in Geoagiu-Bai with specific rehabilitation procedures has an important role in the treatment and prevention of multiple pathologies; we also highlight the need to update the studies made over time and to supplement them with new data to support the effectiveness and importance of natural climate treatment.

A COMPLEX NEURO – LOCOMOTOR REHABILITATION CASE OF A PATIENT WITH POLITRAUMA ASSOCIATED WITH MULTIPLE COMPLICATIONS / SEQUELA– CASE REPORT



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Abstract

Introduction: This paper, approved by the bioethical commission no. 9181/11.April.2018, features a complex post polytrauma case; this is a severe condition entailing multiple anatomic lesioned structures – at least one of them life-threatening² – that provoke morphofunctional and social disability¹ and, we can assert this case as a politrauma.

Materials and methods: 68 years-old female patient, admitted in multiple occasions in our Clinic’s Division for a quadriplegic type of motor dysfunction, sphincter disorders, numbness, tingling, and pricking sensations, sensitivity to touch, dysarthria and severe locomotor and self-grooming dysfunction. The functional incapability was caused by the multitrauma – multiple cranial fractures including the viscerocranium, partial focal seizures, C6 vertebra body and from T11 to L1 spine fractures, pelvic ring breach, and calf bones displacement-with multiple surgeries adjoined to a treated rheumatoid arthritis. At first admittance, the patient was bedridden with retention type neurogenic bladder and urinary catheterization and recently operated sacral bed sore. During the repeated hospitalizations, the patient suffered complications typical for her condition: multiple urinary tract infections, sacral bed sore and superficial venous thrombosis, all of them being successfully approached and treated by a multidisciplinary team. The clinical and functional evaluations were objectified through the assessment scales/scores: AIS, FIM, QoL (Quality of life), Asworth, FAC, and WISCI II³.

Results: The patients’ evolution was favorable with improved results in all the assessment scales/scores. She had an increased motor control and muscular strength growth on all levels, now she can perform sitting position without any help, standing and sitting exercises at trellis, achieve the initialization of few steps with support by the kinesio-therapist and perform between the parallel beams around 5 steps. Her dysarthria, mood – initially/organic depression – and related behavior, improved her motivation on continued rehabilitation is now positive.

Conclusions: This case represents a suggestive example for the poly-traumatized patients admitted in our Clinics’ Division and the complex approach of each pathology in the wright time for the improvement of the specific neuro-locomotor impairment and the quality of life of our patients.

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EFFICACY OF NATURAL THERAPEUTIC FACTORS FROM OCNA SIBIULUI SPA RESORT IN GONARTHROSIS



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Abstract

Introduction: Through its multiple natural therapeutic factors (the sodium-chloride concentrated waters of 52 lakes, fossil sapropelic mud and sedative bioclimate), Ocna Sibiului spa resort offers the possibility of treatment for a wide range of locomotor system diseases: degenerative, inflammatory and ab-articular rheumatic diseases, post-traumatic disorders, peripheral neurological diseases, gynecological, dermatological, metabolic or respiratory disorders. The spa resort is visited annually, mainly during the summer months, by thousands of Romanian and foreign tourists who come to enjoy treatment and rest in a natural setting favorable to physical and mental regeneration. Although its therapeutic effects have been known since the time of Dacians and Romans, and patients attending treatment feel the beneficial effects on their health, which makes them return year after year, there are no recent studies on the therapeutic efficacy of these natural factors, as would be required in the current context of evidence-based medicine.

Objective: Given the predominantly rheumatic profile of the resort and taking into consideration that knee arthrosis affects more than 60% of persons aged over 60 years, causing pain, limitation of mobility and impairment of quality of life, we aimed to conduct a study evaluating the effects of natural therapeutic factors in Ocna Sibiului spa on the clinical and functional parameters of patients with knee arthrosis.

Material and method: In patients diagnosed with gonarthrosis, who attended a 10-day course of treatment in Ocna Sibiului spa consisting of hot mud packs and hydro-kinesio-therapy in pools with sodium-chloride concentrated water, we assessed at the beginning and at the end of treatment pain, using the visual analogue scale, and mobility, by goniometry and the Lequesne algic-functional index.

Results: The study is in progress, but a preliminary data analysis shows the beneficial effects of treatment with natural therapeutic factors in Ocna Sibiului for patients with gonarthrosis, with a reduction of pain symptoms, an improvement of mobility, an amelioration of functional capacity and quality of life.

Conclusions: Considering the efficacy of natural therapeutic factors and the high accessibility of therapy, treatment in this spa resort remains an important component of the rehabilitation of patients with gonarthrosis.

EFFICACY OF NATURAL THERAPEUTIC FACTORS FROM BAILE GOVORA IN BRONCHIAL ASTHMA



Cristina PETRESCU

S.C.Baile Govora

Abstract

Introduction: Băile Govora spa resort is situated in Vâlcea County, at 20 km from Rm. Vâlcea, on a bypass of the road to Horezu and Tg. Jiu, in the valley of the Hința river, like in a funnel, at an altitude between 330–380 meters, in a particularly charming area with hills covered by beech, fir, oak, spruce and acacia forests. Characteristic of this area is the presence of mineral waters, which represent natural therapeutic factors used for the treatment of various disorders. Baile Govora is one of the richest spa resorts in iodine and bromine waters in Europe, iodine and bromine being of organic origin. It has: hypertonic iodine, bromine, sulfur, chlorine, sodium concentrated mineral waters; hypotonic sulfur mineral waters; hypotonic bicarbonate, sulfur, sodium, calcium waters; mineral water springs for creno-therapy; continental climate with Mediterranean influence, relatively constant humidity, temperature without extremes, and low allergenic pollen load.

Material and method: Case study: patient P.C. aged 29 years, residing in Baia Mare, diagnosed with bronchial asthma at the age of 20 years, presented to our service 4 years before, with noisy symptoms characteristic of this disorder; in addition, she had cyclic manifestations of allergic rhinitis. Clinically, diminished vesicular murmur, diffuse sibilant rales in the chest area with significantly prolonged expiration, wheezing, marked bronchial spasm; 81% O₂ saturation; exertional dyspnea were present.

After tolerance induction, spa treatment based on inhalation therapy was initiated (with mineral waters, aero-therapy and kinesiotherapy). On day 5 of treatment, O₂ saturation increased to 90% and exercise tolerance also improved. The patient returned for the 7th course of treatment.

Results: After the treatment course in the spa resort, the following were found: clinically insignificant steth-acoustic changes; good exercise tolerance; 97% O₂ saturation; no characteristic manifestations. During May-June, vasomotor rhinitis persisted, which was partially therapeutically controlled with Flonidan.

Conclusions: Natural therapeutic factors are effective in bronchial asthma, but annual courses of treatment are required.

C7 AIS-C TETRAPLEGIA AFTER CERVICO-TORACIC ACUTE EPIDURAL SPINAL HEMATOMA: CLINICAL AND PHYSIO-PATHOLOGICAL PARTICULARITIES - CASE PRESENTATION AND LITERATURE REVIEW

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Abstract

Introduction: Epidural hematoma has double anatomopathological topography: intracranial and/or spinal. Its etiology is complex: post-traumatic, iatrogenic (secondary to an inadequate anticoagulation and/or antiplatelet treatment), congenital or acquired disorders of coagulation (leukemia, hepatic cirrhosis, etc.), secondary to an intense Valsalva maneuvers (e.g. during labor) or idiopathic. The purpose of this article is to present a clinical case of acute spinal epidural hematoma (SEDH) with atypical clinical picture, and also a brief synthesis of the literature.

Case presentation: A 80-years-old male patient, with locomotor disability (bilateral congenital foot deformity – fig 1), with multiple cardiovascular comorbidities (chronic atrial fibrillation, dilated cardiomyopathy and chronic heart failure (class II NYHA, with a left ventricle ejection fraction of 40 %), chronically anticoagulated with a vitamin K antagonist (acenocumarol) suffered a low-energy C7 vertebral fracture followed by a SEDH at C3-Th2 vertebral levels. The elderly felt a dizziness, and had fallen (from body level) without cranial trauma, event followed by a short loss of consciousness (without convulsions or sphincter relaxation). Hemilaminectomy at the C4-Th2 levels was performed for decompression and evacuation of the SEDH. The patient was then transferred in our rehabilitation clinic with a C7 AIS-C tetraplegia, neurogenic bladder and bowel and wound dehiscence (healed per secundam). The rehabilitation program was individualized and adapted to the current clinical-biological status.

Discussion: The case particularity consists in the difficulty to accurately indicate the exact chronological chain of etiopathogenetic mechanisms generating the acute SEDH. The anticoagulant therapy might be incriminated as an iatrogenic cause for a "spontaneous" SEDH, but most probably its etiology is traumatic, consequence of the cervical spine fracture due the low-intensity biomechanic impact. The patient had accidentally fallen on his ischial tuberosities and then on his back, without cranial impact with the surrounding objects (e.g. furniture). Typically, this type of level fall causes fractures of the atlanto-axonal vertebral complex (C1-2), different from the current case (followed by C7 vertebral fracture).

The loss of consciousness for a short period of time could be owed to a cardiogenic syncope, a minor head trauma and/or a transient ischemic attack.

The complex predisposing circumstances to accidental fall in our elderly patient were due to the:

- unstable locomotor function, secondary to his congenital clubfoot deformity / disability
- chronic atrial fibrillation, hypodiastolic phenomena with global cerebral circulatory insufficiency (cardiogenic syncope) and/ or a transient ischaemic cerebral attack.

The **functional prognosis** is poor, because of to the severe cardiovascular pathology, which represents the major impediment due to the somatic (**body** functions and structure) impairments. This health-related condition had severe repercussions on the subject's **activity** (related to tasks and basic activities of daily living) and **participation**, affecting the outcome of rehabilitation, and his **quality of life**.

The **vital prognosis** depends on prevention of common health complications (such as urinary tract infections, bowel problems, and pressure sores), in the context of the severe cardiac and neurological comorbidities. The vitamin K antagonist was replaced with a novel anticoagulant (apixabanum), in order to provide secondary and tertiary prophylaxis of cardio-embolic stroke.

Keywords: *spinal epidural hematoma, elderly, falling from level, rehabilitation, prognosis*

PAIN LOCALIZED AT HANDS: FREQUENT AND RARE CAUSES

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Abstract

Introduction: The hand can be considered the "patient' card" because it is the site of numerous local and systemic disorders. A careful anamnesis allows identification the clinical features of the pain, exact location of the problem, excludes infections, trauma, and may bring important data about the existence of swelling, color changes or skin texture abnormalities.

Exact localization of the pain, affecting specific movements, presence of paresthesia, visible joints involvement and prolonged morning stiffness are highly suggestive for articular, periarticular, neurogenic or referred pain.

Materials and methods: Primary or secondary osteoarthritis is the main cause of pain in the hand. Women in perimenopause are more frequently affected and the role of heredity and repetitive movements is recognized in its occurrence. Imaging and laboratory investigations allow the diagnosis and differentiation of other entities (rheumatoid arthritis, psoriatic arthritis).

The women are also affected by rheumatoid arthritis, characterized by symmetrically small joints arthritis, accompanied by prolonged morning stiffness. The presence of certain specific autoantibodies, typical imagistic changes make possible the diagnosis and allow rapid initiation of immunosuppressive therapy.

Acute intense hand' pain with bilateral swelling of the hands, tenosynovitis of the flexors and extensors, accompanied by fever, asthenia, weight loss, which affects elderly men more often, possibly association with neoplasms, leads to RS3PE syndrome (Remitting Seronegative Symmetrical Synovitis with Pitting Edema).

The nocturnal pain, accentuated by specific compression movements, associated with paresthesia in specific nerve distribution territories, in a patient known for hypothyroidism, amyloidosis, limb fractures, severe arthrosis, is highly suggestive for compression syndrome (tunnel carpal /ulnar or cubital syndrome).

The joints and skin damage of the hand is common in systemic scleroderma (autoimmune multisystemic disorders) and requires differential diagnosis with diabetic cheiroarthropathy (a frequent entity in patients with diabetes mellitus).

Some traumas may be involved in the occurrence of spin arthritis, Kienboks disease, Secretan syndrome, or algoneurodystrophy. Hypertrophic osteoarthropathy or Dupuytren contractures are other entities that affect different structures in the hand.

Results and conclusions: The suspicion and recognition of some specific elements suggest the diagnosis of these pathologies. An increased role in diagnosing and establishing effective treatment lies with the multidisciplinary team.

INCREASING THE EFFECTIVENESS OF TREATMENT OF KNEE OSTEOARTHRITIS BY COMBINING PHYSIOTHERAPY WITH GLUCOSAMINE AND CHONDROITIN SULFATE

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Abstract

Introduction: Knee osteoarthritis is the most common chronic disorder of the population over 50-year-old with invalid outcome. Conservative therapy aims at delaying cartilage degeneration using condensing agents, being a valid approach. A commercially available food supplement, Yogaflex, containing glucosamine sulphate and chondroitin sulphate was used In this study. The purpose of this study was to evaluate the efficacy and safety of Yogaflex, combined with physiotherapy in the treatment of subjects with knee osteoarthritis.

Materials and methods:

The study was conducted at the Micromedica Clinic, in Piatra Neamț, on two groups of 25 patients diagnosed by the orthopedist and sent to physiotherapy. Patients are between 50 and 65 years old. The experimental group was composed of 17 patients treated with Yogaflex and physiotherapy for 4 weeks and the control group composed of 8 patients treated just with physiotherapy . Both groups had a set of 10 physiotherapy sessions, including: electrotherapy, LASER therapy, ultrasound and kinesio-therapy. Viable patients were those with VAS 4-5, who passed an initial evaluation and after 4 weeks, through a check-up evaluation.

Results: The results obtained were analyzed in terms of two specific indicators: visual analogue scale (VAS)-for pain intensity measurement and motion amplitude measurement (ROM). The main result was the decrease in pain intensity, measured both in motion and at rest, and the secondary outcome was the increase in the amplitude of motion in the patients who benefited from the combined recovery treatment plan. After 4 weeks, both groups had clinical improvements, VAS decreased from 4 to 0 at rest, the differences being only in motion: group 1 recording VAS 0 and group 2- VAS 1.

Conclusions: Following the analysis of the two groups of patients, we can say that the physiotherapeutic treatment plan has greatly reduced the symptomatology, but patients who have followed physiotherapy combined with the chondroprotective therapy have enjoyed better results. Yogaflex combined with physiotherapy can relieve pain and can help improve algofunctional score in patients with knee OA, especially in motion.

Key words: knee osteoarthritis, condroprotectors, physiotherapy, glucosamine, chondroitin

ADVANCED SPECIFIC OBJECTIVES REGARDING RELATIONSHIP BETWEEN SCOLIOTIC MAIN CURB* ANGULATION AND MAXIM PRESSURE EXERTED BY THE FOOT DURING GAIT PHASES, IN CHILDREN AND ADOLESCENTS WITHOUT PRIMARY PODAL PATHOLOGY

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Abstract

Introduction: The study is developing at “Dr.N. Robanescu” National Rehabilitation Center for Children where a lot of children with scoliosis are in evidence and get treatment. Thus, we want to consider as objective the podal support highlighted in specific investigations, to see if there is a connection between the curvatures and the modification (deviation from normal) of the foot contact with the ground. The reason for choosing this theme is that we want to present a new assessment method for the patient with vertebral static disorder. The study aims to present how this method helps us to analyze also the possibilities of multidisciplinary therapeutic intervention for the patient with scoliosis.

Materials and methods: We used the modern training and assessment technique such as: Footscan 7 gait 2nd generation, with a 2m board, with 16.000 sensors, unique in the specialty centers for children from our country; Footscan Balance 7. The plantar support represents the foot contact with the support surface in pause and walking, highlighted in our study by the Foot 7 gait 2nd generation device. The studied/ analyzed group consists of 120 patients with scoliosis, aged between 5 and 18 with 72 girls and 48 boys. We have been evaluating them since their first admission to our hospital at the beginning of 2013 until now. The patients were analyzed in 2 situations as follows: without corset (in static and dynamic position) and with Cheneau Corset (in the same situations), this orthosis model being recommended by the specialist doctor during 3 periods of hospital admission. The static processing will be achieved after the accomplishment of the frequency histograms afferent to the identification of the normality degree of the populations' distribution. For differentiation, we will be able to perform parametric tests (type t) or nonparametric tests (type, for example, chi2).

Results: According to these tests we will see if the observation statistically objectifies or not. The static results reveal that the pressure applied by the feet on the support surface is modified by the repositioning of the spine in the Cheneau corset (which is lower when wearing the corset), during the 3 admission periods and is statistically highly significant for all the situations.

Conclusion: There is a relation between the rigor of the scoliotic deviation and the pressure exerted by the foot on the support surface: when the curvature decrease with more than 15 degrees, passively, by applying the Cheneau corset the plantar support corrects by uniforming the pressures both on the forefoot and on the calcaneal region, through the increasing of the surface contact with the ground – towards the level of normality.

PHISYCAL WORKOUT AT SPECIAL POPULATION GROUPS



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Abstract

Introduction: Physical exercise represents an essential component of the management of different ailments and disorders, having an important role in the primary and secondary prophylaxis and general mortality reduction. Therapeutically exercises must take into account the physical, psychological and comorbidity particularities of the patients enrolled in rehabilitation programs.

Materials and methods: This paper presents special issues in the rehabilitation program of patients with cardio-vascular diseases, nutrition and metabolism disturbances, rheumatic ailments, cancer and some neurologic pathologies. To inflict a rehabilitation program, it is necessary to stratify the risks, to evaluate the exertion functional capacity, the clinical and para-clinical parameters, the quality of life and the possibility of family, social and professional reintegration. The objectives and rehabilitation methods, the physical workout parameters (intensity, duration, frequency and proceeding) and their results represent a few key points of this paper. In the case of diabetic patients, there are highlighted the negative effects of physical inactivity, the optimization of safety during rehabilitation exercises and major or relative contraindications of the physical workout.

Results: The benefits of rehabilitation are represented by the compensation of the physical and psychical negative effects of bed rest during hospitalization, the possibility of returning to disease imposed limits of ADL (Activity of Daily Living) scores and patient training for rehabilitation optimization after discharge. In the case of cancer patients, the physical exercises had a benefic role in immune function and psychological status improvement and in counteracting the effects of inactivity.

Conclusions: Therapeutic exercises for muscular force, flexibility, proprioception and quality of life improvement represent an important factor in prevention, treatment and rehabilitation of certain ailments and physical inability. It is necessary for the program of the physical workout to be individualized for each patient accordingly to his/hers medical condition, severity and to not interfere with the standard medical treatment of the respective disease.

THE ROLE OF PHYSIO-KINESIOTHERAPY IN THE MANAGEMENT OF DIABETES MELLITUS

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Abstract

Introduction: Diabetes mellitus is a one of the major diseases in the world that affect more than 8% of adults meaning approximately 380 million people. It is estimated that in less than 20 years the number of people with DM will reach 600 million. The costs for diabetes mellitus treatment is huge and more than half is spent for its complications. This disease is associated with morbid obesity linked to blindness, renal failure, atherosclerotic vascular diseases and lower limb amputation.

Materials and methods: The aim of this study is to identify non-pharmacological methods, mainly diet and exercise, in which patients diagnosed diabetes mellitus maintain their functions and independence for as long as possible. Recovery program includes:

- Aerobic effort - can include a series of rhythmic and dynamic activities that involve the big muscle groups and are aimed at improving exercise capacity, weight control and increasing muscle strength.
- Muscle growth exercises performed with light weights or apparatus, involving a large number of repetitions used to improve tonus and increase muscle strength.
- Flexibility exercises.

Frequency of exercise sessions depends on the type of exercise, aerobic exercises can be performed at a frequency of 5-7 times/ week, while strength exercises are recommended only 2-3 times / week. Balneo-physiotherapy treatment includes thermotherapy and hydro-mineral cures. Thermotherapy is applied in compensated forms and has the role of stimulating burning processes in the body, and therefore, consumption of glucose or fat storage.

Results and conclusions: Physio-kinesiotherapy recovery methods contribute to maintaining healthy joints, kinesthetic information preservation, avoiding musculoskeletal and redness reversals, maintaining muscle trophicity, improving local vasculature and trophicity, improving functional capacity.

ENHANCEMENT OF BONE CONSOLIDATION USING PULSED ELECTROMAGNETIC SHORT-WAVES: EXPERIMENTAL STUDY ON MURINE MODELS

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Abstract

Introduction: Delay in bone consolidation and nonunion occur in 5-10% of the total number of fractures and are often hard to treat in order to obtain an optimum morphologic and functional result. Regarding the bone consolidation and spinal fusion, pulsed electromagnetic field (PEMF) stimulators are the most commonly noninvasive method used. The limitations of the studies that evaluated the potential of these treatments are represented by the proper moment when to start the PEMF therapy or which spectral characteristics and energy output would be the most effective.

Materials and methods: The experiment was performed on 20 murine models. After an open fracture of the left femoral diaphysis was made, there were introduced titanium nails in order to reduce and stabilize the fracture. After the second day of the intervention, ten murine models were treated with pulsed electromagnetic short – waves (PEMSW group) provide by DIAPULSE machine, ten minutes per day at 4/400 pulses/sec, for two weeks. The bone consolidation was evaluated by optical microscopy of the histological sections, micro-CT and the mechanical resistance of the bone by tree-point bonding test. Furthermore, alkaline phosphatase and osteocalcin were analyzed before the intervention, after two weeks and after eight weeks post-surgery.

Results: Histological images, at two weeks, showed in the PEMS group a more extensive and mineralized callus and micro-CT scan revealed a higher bone volume per total tissue volume (BV/TV) in the callus area: 34.23% in the PEMS group vs. 29.87% in the control group (CG) ($p=0.028$). Moreover, alkaline phosphatases (AP) ($p=0.023$) and osteocalcin (OC) ($p=0.016$) serum levels were higher in the PEMS group. Tree-point bonding test showed a higher mechanical resistance in the PEMS group compared to CG ($p=0.03$). At eight weeks histology and micro-CT revealed a more advanced stage of bone remodeling, CG had a TV of 110.72% ($p<0.001$) compared to PEMS group. Furthermore, the AP ($p=0.19$) and OC ($p=0.15$) serum levels showed higher values in the CG but without statistical differences.

Conclusions: Pulsed electromagnetic short-waves, applied from the second day post-operative, showed an improvement in the bone consolidation process, reducing the total period of fracture healing.

Keywords: pulsed electromagnetic short-waves, bone consolidation, titanium nails.

THE EFFICIENCY OF THE COMPLEX RECOVERY TREATMENT UPON THE FUNCTIONAL STATUS OF THE PATIENTS DIAGNOSED WITH OSTEOARTHRITIS OF THE HIP.

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Abstract

Introduction: Osteoarthritis of the hip is a degenerative condition with a slow progressive evolution, joint deterioration, permanent pain and walking issues.

Objectives: The evaluation of the efficiency of the physical recovery treatment for the patients diagnosed with arthrosis at the level of the coxofemoral joint by using the functional mobility coefficient.

Materials and methods: The trial was conducted for 6 months under ambulatory conditions on 126 patients who were diagnosed with osteoarthritis of the hip from a clinical and functional point of view. The inclusion criteria were: male and female patients of over 55, a diagnosis of osteoarthritis of the hip for the past 6 months, the consent to take part to the trial. The exclusion criteria were: age under 55, refusal to take part to the trial and the existence of comorbidities (diabetes mellitus, uncontrolled high blood pressure, severe liver/ kidney diseases, obesity or cancer). The evaluation of the patients were made at the beginning of the treatment, 10 days after the treatment and 45 days after its end. The aimed parameters were: pain, mobility, functionality and the quality of life. The Richer functional coefficient was used. The Western Ontario & McMaster Universities Arthritis Index (WOMAC), The Visual Analogue Scale (VAS) and The Quality of Life questionnaire (QOL) were also used. The patients benefitted from pharmacological and physical kinetic treatment against pains and contractions, to tonify the muscles, for their dynamic stability and control. They were divided into two groups: the witness group who received treatment by medication and by physical exercises, as well as the trial group who also had an individualized program of kinetic therapy. Another step was to use low frequency currents (Trabert), average frequency currents (interferential) and high frequency currents (short waves). The kinetic therapy program included mobility techniques that were passive-active, active and active-passive in order to resume stability and to prolong the functionality at the level of the sick joints.

Results: The evaluation of the patients in the two groups pointed out the following aspects:

- The pain to the passive and active mobilization improved for both groups whereas the results were confirmed by the VAS scale and by the pain section of the VAS scale.
- The joint mobility improved for the trial group in comparison to the control group whereas the results were positive by the mobility section of the VAS but also by calculating the richer coefficient.
- The score for the global index of the hip arthrosis by using the WOMAC scale was higher for the trial group.

Conclusions: The use of the complex physical treatment allowed improvement of the symptoms, functionality and mobility especially for the patients of the trial group whereas statistically significant differences in the favor of the trial group. The quality of life for the patients of both groups improved significantly. The results attained by this clinical trial confirm the efficacy of the two treatment types and emphasized the importance to make an individualized kinetic therapeutic program.

Key words: functional status, mobility, recovery, degenerative condition

THE USE OF ELASTIC BANDS IN THE RECOVERY OF LOWER LUMBAR DISCOPATHY



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Abstract

Introduction: The 21st century came with a technological explosion, an explosion that relieved both personal life and professional life, but as any help provided, there are also side effects. One of the most important secondary side effects is lack of movement, which has led to a substantial increase in the number of lower lumbar discopathy.

Materials and methods: The study was performed on a group of 33 patients, diagnosed with lower lumbar discopathy, between the ages of 35 and 60, both male and female. The patients received an initial assessment (objective and subjective) followed by a therapeutic plan, a structured exercise plan made exclusive by using elastic bands. At the end of treatment, the patients received final testing and the results were compared statistically with the initial values.

Results: At the end of the treatment, the data obtained from the initial testing was compared with the final results. The results were statistically processed both before and after applying the therapeutic treatment, constructing a graphical interface as a representation of the statistical curves.

Conclusions: After comparing the results we can say that the therapeutic plan consisting of exercise with elastic bands has positive effects in the recovery of low lumbar discopathy. The use of the graphical interfaces helps the reader to better understand the results.

Key words: elastic bands, lumbar discopathy, therapeutic plan

CIRCADIAN VARIATION OF STROKE ONSET

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Abstract

Introduction: Circadian cycle affects a wide range of physiological and physio-pathological processes. A circadian pattern of stroke occurrence variation has been described but with certain differences between different reports. The underlying reasons may be connected to exogenous factors (sleep–awake cycles including cyclic physical activity and assuming the up-right posture) and endogenous factors, with their diurnal variation (blood pressure, hemostatic balance, autonomic system activity). The aims of the present study are to investigate the existence of a circadian variation of stroke and possible differences between stroke types in the Cluj Napoca area.

Materials and method: The stroke event data were acquired from the Patient Records of a consecutive series of 1083 patients admitted through the Emergency Room at Neurology Departments I and II of the District Hospital of Cluj Napoca, between 1 January 2012 and 31 December 2012. The classifiable onset time was assigned to one of four six-hour intervals: 00.01-06.00 (night), 06.01-12.00 (morning), 12.01-18.00 (afternoon) and 18.01-24.00 (evening). Demographic data and vascular risk factors were recorded.

Results: All three types of strokes (ischemic stroke, hemorrhagic stroke and subarachnoid hemorrhage) have shown a circadian variation concerning their occurrence, with the peak of incidence in the morning and the lowest value during night time. This pattern is independent by demographic factors and vascular risk factors.

Conclusion: The results of our study confirmed the most often reported circadian pattern of onset occurrence for all stroke types, with the higher incidence in the morning. This acknowledgement may lead to a chrono-therapeutic and chrono-preventive approach, targeting the period of the highest vulnerability after awaking.

Keywords: stroke onset, circadian variation, stroke types

THE EVOLUTION OF THE CARDIOVASCULAR PROFILE IN PATIENTS HOSPITALIZED IN THE COVASNA CARDIOVASCULAR REHABILITATION HOSPITAL DURING A SINGLE ADMISSION PERIOD



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Abstract

Introduction: The cardiovascular mortality and morbidity in Romania continue to have a high incidence. The cardiovascular risk factors play an extremely important role in the cardiovascular diseases pathophysiology, in the cardiovascular morbidity and mortality evolution. The risk factors can be classified as non-modifiable and modifiable. The patient follow-up is important by using primary and secondary prevention measures and also cardiovascular rehabilitation programmes to modify the cardiovascular risk. A special type of phase III rehabilitation is the institutionalized, in-hospital one, the so-called “Covasna Model” which is being used at the Cardiovascular Rehabilitation Hospital Covasna and which is used to determine necessary intervention measures to influence the modifiable risk factors. The aim of this study was to evaluate the cardiovascular risk factors profile during a single admission of patients in the Cardiovascular Rehabilitation Hospital Covasna.

Material and Methods: 141 patients of whom 94 women (66.7%) and 47 men (33.3%) admitted to the Cardiovascular Rehabilitation Hospital Covasna were included in the study. The mean age was 65.41 ± 9.6 years and the mean hospitalization period was 15 days.

All patients were evaluated regarding the existence of main cardiovascular risk factor and cardiovascular diseases, prescribed medication and indicated rehabilitation methods. All patient were included in cardiovascular rehabilitation programmes represented by climatotherapy, aerotherapy, physical exercise, CO₂ baths, mofettes, electrotherapy, health education, cardioprotective therapy (aspirin, ACE inhibitors/sartans, beta-blockers, statins).

The evolution of the mean values of lipidic fractions, glycemia, atherogenic index was analized between admission and discharge.

Results: The prevalence of the risk factors in the studied group was: hypertension 84.4% (119), dyslipidaemia 61% (86), overweight/obesity 27.7% (39), smoking 1.4% (2), diabetes mellitus 25.5% (36). The cardiovascular risk factors were present in similar proportion in both genders, with the exception of diabetes mellitus which was more frequent in men. The cardiovascular rehabilitation programmes were similarly indicated in both genders. At discharge, the main blood biochemistry parameters values were improved similarly in both genders with the exception of LDL-cholesterol which had a lower improvement in men. The participation of patients in the rehabilitation programmes and procedures for a period of 15 days in the Cardiovascular Rehabilitation Hosipital Covasna was followed by a significant improvement of blood biochemistry parameters represented by total cholesterol, LDL-cholesterol, triglycerides, HDL-cholesterol and glycemia.

Discussion and Conclusion: In cardiovascular patients obtaining an improvement in cardiovascular risk factors requires long-term cardiovascular rehabilitation programmes as well as lifestyle changes and secondary medical prevention. The Covasna balneary resort with its specific natural factors offers a special treatment facility.

PLATELET RICH PLASMA IN TREATMENT OF HAND AND WRIST OSTEOARTHRITIS

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Abstract

Introduction: The purpose of this study was to evaluate Platelet Rich Plasma (PRP) injection into the wrist and hand osteoarthritis. A systematic review was performed with the available literature.

Materials and methods: We used PubMed and Medscape research engines to look for publications relating to Platelet Rich Plasma and Treatment of Hand and Wrist Osteoarthritis. We have found only few specialized articles on this subject.

Results: In total, only four articles, on this specific issue were found. Other articles related to the treatment of distal radius fractures with PRP injections were excluded from this review and are the subject of another study dealing with PRP administration in acute disease (fractures).

Two of the four articles are very general studies, showing the PRP injection procedure, the third one describes the Surgical Alternatives for thumb osteoarthritis: carpometacarpal (CMC) joint or trapeziometacarpal (TMC) joint versus Non-surgical options for thumb arthritis (PRP). The last study (the fourth) is a pilot study about Leukocyte-Reduced Platelet-Rich Plasma Treatment of Basal Thumb Arthritis. The report is about 10 patients with (TMC) joint osteoarthritis. They were treated with 2 intra-articular PRP injections in 4 weeks apart. Patients were evaluated after 3 and 6 month. It was found that grip was unaffected but pinch was declined after 6 months.

Conclusions: 1. There are few studies about the use of PRP in chronic disease (osteoarthritis) of wrist and fingers, improvement was shown only in the treatment of Trapeziometacarpal (TMC) arthritis and partly in Kienbok disease (lunatomalacia).

2. In chronic disease PRP is effective only when used in the incipient stages (stage 1 or 2). In the late stages (stage 3 or 4) surgical treatment is recommended.

CLINICAL-THERAPEUTIC AND REHABILITATION COMPLEX ASPECTS IN A CHRONIC ETHANOL-CONSUMING PATIENT WITH INCOMPLETE AIS / FRANKEL D TETRAPLEGIA AFTER CERVICAL SPINAL CORD INJURY ON THE BACKGROUND OF ANKYLOSING SPONDYLITIS, WITH C6 FRACTURE OPERATED (BY MIXED OSTEOSYNTHESIS) AND IMMOBILIZED IN THE HALO-VEST BY FALLING AND THE POSTERIOR CEREBRAL ARTERY ISCHEMIC STROKE (POSSIBLY BY VERTEBRAL ARTERY DISSECTION)

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Abstract

Introduction

Spinal cord injuries and strokes are frequent causes of motor deficit in patients of all ages, with complex family and social consequences (through sensitivity and movement disorders). On the other hand, toxic-nutritional abuses (especially ethanol consumption) cause morphophysiological changes throughout the body, with frequent consecutive neuro-psychic manifestations, followed by (potentially) various traumatic injuries. Therefore, the biological and scientific clinical follow-up of traumatized vertebromedullary patients is of particular importance.

Materials and method

With the approval of the Bioethics Commission of the Bagdasar Arseni Emergency Clinical Hospital (TEHBA) Bucharest (number 9181 dated April 11, 2018), we will present the special case of a patient admitted to the Neuromuscular Recovery Clinic of THEBA for incomplete tetraplegia motor deficit AIS/Frankel D, with neurologic level C6 after a vertebral-medullary trauma (produced in conditions of ethanol abuse) and with parieto-occipital ischemic vascular accident produced simultaneously.

Results

The peculiarities of this case are the possible (but less common) immediate consequences of vertebral-medullary traumas: paravertebral nervous ganglion lesions; arterial (carotid / vertebral) dissections, which can cause ischemic lesions, all requiring appropriate clinical and therapeutic management.

Conclusions

Spinal cord injuries can be favored by toxic-nutritional abuse and may have immediate, late, and permanent morphophysiological consequences. However, sometimes the clinical evolution and prognosis are surprisingly positive.

MANAGEMENT OF REHABILITATION ON PATIENTS WITH LARGE JOINTS DEGENERATION DISEASE

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Abstract

Introduction:

Joints Degeneration Disease or Osteoarthritis (OA) is the most common joint disorder and one of the major cause of musculoskeletal pain and stiffness, conditions yielding into activity and participation restrictions. It also impacts the quality of life and represents an element conditioning important economic burdens in society. Rehabilitation programs contribute significantly to the management of OA, envisaging the improvement of the functionality and the quality of life of patients who suffer from OA. In order to optimize the functional recovery and efficiency of rehabilitation programs, we identified the fact that the timeliness of recovery has a direct influence on patients who suffer of OA. The analysis of the efficacy of rehabilitation programs with patients who suffer of OA, accomplished through Prisma Key Parameters (PKP), confirmed that the programs are more efficient if the principle of precocity and complexity, are taken into consideration. The range of PKP analysis supports a comprehensive set of measures, designed to assess the quality of OA related health care.

Materials and Methods:

We undertook a retrospective and observational study which took place between January 2012 and January 2016, funded on surveilling a total of 373 adults with OA – of these, 251 underwent rehabilitation treatment during the precocious period within the Rehabilitation Ward of the Orthopedics and Traumatology Hospital, but 132 patients underwent treatment during the late period (the treatment referred to: joint mobilization, post-isomeric relaxation, ultrasound, laser, or electrical nerve stimulation). The patients were tested according to a Health System guidance for rehabilitation interventions: WOMAC (Western Ontario and McMaster Universities Arthritis Index), ADLS (Activity of Daily Living Scale), PCS (Physical Component Summary), QOL (Quality of Life).

Results: The group who underwent rehabilitation treatment in a late period had worse scores and performance-based measure PCS ($P=0.004$) than the group who started the treatment during the precocious period. Also, the control group had a significantly lower ADLS ($P=0.0027$) and QOL ($P=0.0025$) than the group who received complex treatment during the precocious period. The analysis of the results of the research shows that the dynamics of the QOL index varied depending on the term of the illness: short-term diseases encountered a higher dynamics of the quality of life, and correspondingly long term-diseases a more insignificant dynamic of the QOL index ($P=0.008$). Also, the dynamics of the QOL index differed by gender: to a large extent, women had better results than men ($P<0.001$).

Conclusions: Overall, the results of the research confirm that early participation, the compliance to the complexity of the rehabilitation program as well as the prognostic factor should be considered during the management of OA treatment. The effectiveness of rehabilitation programs applied during the precocious period of OA was demonstrated to be achievable through prisma Key Parameters.

THE EFFICIENCY OF MEDICAL REHABILITATION TREATMENT IN PATIENTS WITH HEMOPHILIA - THE EXPERIENCE OF "CRISTIAN SERBAN" BUZIAS CENTER

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Abstract

Introduction: Hemophilia is a hereditary X-linked coagulopathy characterized by a deficiency of FVIII (hemophilia A) or FIX (hemophilia B) that causes hemorrhage depending on the severity of the disease; in cases of severe forms, spontaneous hemorrhage may be life threatening. Localized severe bleeding takes place at the different sites such as articular (ankle, knee, elbow), muscular (iliopsoas, thigh, forearm) and mucous membranes (gums, tongue, rhinorrhea, genitourinary tract). Almost all of the patients with hemophilia (PwH) have a form of arthropathy, most often disabling and deforming, with important static, balance, gripping and walking disorders, marked pain and a significant reduction in quality of life.

Material and method: The study includes 85 patients with hemophilia (PwH) from all over the country, patients taking part constantly and periodically in our rehabilitation programs. From June to August 2017, the patients benefited from a rehabilitation treatment along with specific medical education lessons. The patients are between 3 and 50 years of age; 66 patients with hemophilia A, 12 patients with hemophilia B and 7 von Willebrand disease patients. The clinical examination includes goniometric measurements, the number of joints with hemarthrosis/ arthropathy, number of target joints (> 4 joint bleeding in 6 months), HJHS (Hemophilia Joint Health Score), Functional Independence Score in Hemophilia (FISH) score and quality of life evaluation (EQ-5D-a, EQ-5D-Y with EQ-VAS). The patients took part in a complex medical rehabilitation program, under the substitution therapy coordinated by the hematologist, a program consisting of individual and group kinesiotherapy, hydrotherapy, hydro-kinesiotherapy, electrotherapy and massage, the duration of the treatment being between 10 and 20 days. The medical rehabilitation treatment has been associated with psychological counseling sessions and medical education lessons.

Results: Following the rehabilitation program, we found a significant improvement in pain relief, increased joint mobility and improved quality of life. We also evaluated musculoskeletal status in these patients, suggesting both the severity and gravity of musculoskeletal impairment and the degree of disability, especially in patients over 18 years of age.

Conclusion: Hemophilic arthropathy is a severe form of joint disease, in most cases invalidating, which significantly reduces the quality of life of these patients. It is important to emphasize the vital role of rehabilitation treatment that PwH should follow, treatment that relieves pain, improves musculoskeletal function, prepares the patient for future arthroplasty, or recovers the joint/limb function after arthroplasty. Rehabilitation in hemophilia begins with diagnosis and continues throughout life, constantly and sustained, coordinated by a multidisciplinary team composed of a hematologist, rehabilitation physician, physical therapist, masseur and psychologist.

OSTEOMUSCULOARTICULAR PROFESSIONAL DISEASES AND PROFESSIONAL-LINKED DISEASES. CONCEPT, PROFESSIONAL MORBIDITY IN MARAMURES COUNTY AND IMPLICATIONS FOR MEDICAL REHABILITATION SERVICES OF THESE DISEASES



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Abstract

Introduction

Legislation in occupational medicine includes osteomusculoarticular diseases both in the category of occupational diseases and those related to the profession. From the point of view of Occupational Medicine, workplace records and monitorization are different for occupational and profession-linked diseases.

Materials and Methods Criteria for qualifying as occupational or profession-linked disease as well as workplace monitorization requirements of these diseases are different. Starting from the analysis of national morbidity data, the occupational morbidity in Maramures county is analyzed as well as the collaboration between the rehabilitation ambulatory and the occupational medicine service, which ensure hospitalization of the patients with occupational diseases in the County Emergency Hospital, through data synthesis of patients hospitalized between February - March 2018.

Results Analysis of morbidity with temporary work incapacity shows that at national level, the ratio of osteomusculoarticular diseases increased from 7-10% between 1970-1990 reaching 18-20% between 2003-2013. General morbidity on disease types had a progressive increase in time for osteomusculoarticular diseases, their number being by 4.83 times higher in 2014 than in 1970. In 2013, national statistics show a 25.58% prevalence of osteomusculoarticular diseases within professional morbidity. Occupational morbidity by osteomusculoarticular diseases in Maramures county has increased progressively over the last 6 years both in terms of number (doubled) and especially as ratio within occupational morbidity (from 70% to 85%). In the Occupational Disease Department, out of a total of 81 patients discharged in February, 20 followed physiotherapy procedures, and in March of a total of 79 discharged patients, 29 associated physiotherapy procedures during hospitalization. Patients' access to physiotherapy procedures was not determined by the type of occupational disease (most commonly pneumoconiosis) but by associated osteomuscular diseases.

Conclusions Criteria for classification as occupational or profession-linked disease are difficult to define, accuracy of recorded data and efficiency of occupational medicine services being decisive factors. Electronic health records in occupational medicine, interoperable with HIH IT systems (Health Insurance House-Information Technology systems), can optimize the qualification either as occupational or profession-linked disease, as well as the collaboration between the medical rehabilitation and occupational health services. Osteomuscular diseases have a progressive increase both as general morbidity and temporary work inability, but also as national and professional morbidity at Maramures county level. Access to the medical rehabilitation service for patients hospitalized with occupational diseases is limited by the restricted capacity of the medical rehabilitation service (insufficient medical staff, equipment) to respond to the increased demand from the occupational disease department.

The necessity of expanding rehabilitation ambulatory medical services as well as of hospitalization is imperative especially as the presented morbidity data only partially reflect the actual morbidity (the iceberg peak), patients with occupational diseases associating (due to noxious working conditions) unacknowledged osteomusculoarticular diseases but also since these diseases affect the professionally active population who need to recover their work capacity.

Key-words: physiotherapy, medical rehabilitation service, professional disease, profession-linked disease, professional morbidity.

ARTHROSCOPIC VERSUS OPEN SURGERY AND THERAPEUTIC OPTIONS OF KIENBÖCK DISEASE

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Abstract

Introduction: The goal of this study was to compare the two surgical procedures (arthroscopic versus open surgery) in the treatment of Kienböck disease (KD) and all therapeutic options depending on the stage of disease.

Materials and Methods: Various electronic databases were used to search for articles on this topic. This review aims to evaluate and summarize the various surgical interventions and their outcomes in KD.

Results: Many treatments for KD are described and various surgical options are available based on the stage of disease. The surgical procedure including radial shortening osteotomy, capitate shortening osteotomy, total wrist arthrodesis, proximal row carpectomy, scapho-trapezio-trapezoid arthrodesis, vascularized bone grafting and excisional arthroplasty are the most commonly used. In the study there were included a number of 190 patients in different stages (Lichtman) of KD. They have undergone to surgical interventions (arthroscopic and open surgery) by following the same things in each group; decreasing pain, increasing range of motion (ROM) and grip strength, also earlier return to unrestricted daily activities. Patients were followed-up for a long period (between 1 year and 10 years postoperative).

Conclusions:

1. For each stage of KD, there are several therapeutic options.
2. Preoperative arthroscopic evaluation of cartilage damage can inform treatment decisions. Arthroscopic surgery resulted in shorter operating time, shorter hospital stay and earlier return to unrestricted daily activities.

THE CORRELATION BETWEEN THE WALK AND THE PLANTAR PRESSURE IN PUBIS OSTEITIS

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Abstract

Introduction: Osteitis of the pubis is a syndrome that affects both performance athletes and the large mass of the population. Non-invasive, radiation-free postural analysis can come to the aid of radiological imaging, due to measurements made using the Global Postural System and the specific software. Recent studies show an increase in pubis osteitis syndrome among performance athletes because of the increase in intensity and frequency of training and matches, hardness of the playing surface, repetitive strokes, etc. The shortening of the time to restore the body causes the musculo-arthro-kinetic chain of the pubic symphysis to be overstressed, which leads to a deeper analysis of the correlations existing between the lower limbs.

Materials and methods: The study is conducted on a group of 35 patients, 30 of whom are healthy and 5 affected by osteitis. The existence of an imbalance in the center of gravity distribution helps to establish and localize structural changes that may occur in the lower limbs. This is possible by tracking the oscillations that the patient presents during the 20-second test. With the help of the postural-test the data on the duration of the double step and the pressure exerted at the plantar level at each step were taken for both healthy and affected patients. Plantar analysis has provided the opportunity to measure the contact area with the soil and to determine precisely whether the patient presents at the time of testing alterations to the plantar level, as well as the correlations between these values and the changes in walking. The obtained data were statistically interpreted, resulting in significant differences between the two lots.

Results: The statistical processing revealed that once the pathology is installed, changes occur both in the duration and in the pressure exerted at the plantar level for each step. Changes in the duration of the step increased for the healthy limb and decreased for the affected limb, closely correlated with the pressure exerted at the plantar level.

Conclusions: Once installed, pubis osteitis produces both statistically significant changes in both the duration of the step and the pressure exerted at the plantar level. There has been an increase in the duration of the step in the affected member in the mirror with an increase in the pressure exerted at the planting wall of the healthy limb. Based on the data obtained from the statistical analysis, a customized kinesiotherapy and medical recovery program can be developed.

Key words: pubis osteitis, postural-test, statistics, football players.

COMPLEX INTEGRATIVE ETIOLOGICAL (POSSIBLY ENCEPHALOMYELITIS), CLINICAL, PARA CLINICAL AND THERAPEUTIC ASPECTS IN A PATIENT WITH OLD, QUITE LIGHT SPASTIC PARAPARESIS AND SENSITIVITY DISORDERS, OBJECTED BY MEDULLAR MITIGATION AT VERTEBRAL T5-T7 LEVELS -CASE REPORT-



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Abstract

Introduction: This paper, approved by the Bioethical Committee of TEHBA (no. 911/ 11 may 2018), presents an extremely complex case of quite light spastic paraparesis, with a medical history from childhood (at 12 years), encephalomyelitis (remission?), which in adulthood (at 22 years) was diagnosed and treated as multiple sclerosis 1 year and 6 months (this diagnosis has been subsequently denied with IRM in 2017: reducing the size of the medullary cord in the vertebrae plane T5-T7 sequelae aspect) and the afferent neuro-rehabilitative actual management approach, respectively.

Materials and methods: 43 year old female patient admitted in our Clinic's Division for a AIS/ Frankel D motor deficiency, pain with mechanical carcass at the spine, disturbances of balance, bladder dysfunction (incontinence), bilateral dorsal plantar flexion deficit (left > right), gait with a broad base of support with external unilateral support, with hip flexural, knee flexion, and dorsal flexion deficiency while walking, attack digitigrad (left > right), and sensibility impairment from T12 level downwards. The patient was clinically and functionally evaluated, according to the standard implemented protocols of our Unit, through the following measurement evaluation scales/scores :AIS, FIM, QQL (Quality of life), Ashworth, Penn, FAC, and investigated para-clinically through IRM brain, cervical and thoracic spine, radiographic cervical spine, abdominal echography.

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 4 points, FIM motor with 5 points, QQL with 6 points, and FAC with 2 points), remission of ataxic/vertiginous phenomena, quasi-remission of urinary incontinence (controlling micturition for at least 10 minutes after the urge to urinate); in addition and also very important: diminished spasticity and significantly improved gait pattern. Now she can walk without support on short/medium distances and also very important, she can rise without sitting support (in a relatively low position) to orthostatism, and also climbs and descends stairs with the support of the bar and only with the supervision of another person.

Conclusion: From the etiologic point of view, multiple sclerosis, uterine apoplexy as well as arteriovenous malformation has been recently refuted. The present case represents the importance of building a complete diagnosis (etiologic and of stage) and particular neuro-rehabilitative therapy approach with both clinical, psychological and scientific impact.

PATHOPHYSIOLOGY AND THE GENETIC BASIS OF PAIN

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Abstract

Introduction: International Association for Pain Study (IAPS) proposed the evaluation of pain level as the fifth vital sign to be followed throughout the hospitalization of a patient, beside temperature, breathing, heart rate and blood pressure. Pain is a warning signal to an endogenous or exogenous noxious stimulus and it represents an essential mechanism for survival. When the intensity or duration of pain exceed the expected limits (depending on the etiology of the underlying disease), pain becomes a harmful factor to physical and mental health of the individual.

Material and method:

It can be observed four components on painful phenomena: sensitive-sensory, mental motivational-emotional, psychic cognitive and somatic-vegetative.

Manifestations observed during pain can be classified into four classes with Fordyce model: nociception, pain, suffering and pain behavior.

Pain receptors (nociceptors) are divided into single-modal receptors (specific) activated by mechanical stimulation and multimodal receptors (non-specific) activated by the mechanical, thermal, chemical and biological stimulation.

In "Pain: past, present and future" - by Mogil J.S., published in June, 2012 – it is shown that the chronic pain is an example of interaction between gene and environment.

The COMT gene codifies the catechol-O-methyl transferase. The GCH₁ gene controls the synthesis of an enzyme called GTP (cyclohydrolase 1) that it is involved in dopamine and serotonin production.

The OPRM₁ gene codified the human opioid receptors.

Results and conclusions:

Future development of therapies that increase the pain threshold by acting on the gene COMT and therapies for hereditary increased sensitivity and motility disorder by acting on the gene GCH₁ could be a way for personalized treatment of pain.

Key words: gene, COMT, OPRM₁, GCH₁

CORRELATIONS BETWEEN THE LEVELS OF RADIOLOGICAL SCORES AND THE CLINICAL, HEMATOLOGICAL AND BONE DENSITOMETRY PARAMETERS IN RHEUMATOID ARTHRITIS

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Abstract

Introduction: Rheumatoid arthritis is a disease characterized by chronic inflammation of di-artrochial joints. The cause, probably multifactorial, is still unknown. More often in women, this disorder raised the role of endocrine factors in disease pathogenesis. Regarding the role of genetic factors, types DR3 and DR4 are found more commonly associated with rheumatoid arthritis. Among the most important environmental factors are those of infectious origin.

Material and method:

The clinical study was conducted over a period of two years at the Emergency County Hospital "St.Spiridon" Iasi, on a group of 50 patients with rheumatoid arthritis in various stages of evolution of the disease. The criteria for positive diagnosis were:

- Clinical: NAD, NAT, DAS28 score, VAS, HAQ;
- Para- clinical: ESR, CRP, rheumatoid factors;
- Radiological: Sharp radiographic scores for narrowing and erosion, respectively the total Sharp score;
- Osteodensitometry: determining BMD and calculating T score.

Results:

The number of painful joints (NAD) is statistical directly dependent on Sharp scores values for narrowing and erosion.

DAS28 score directly correlates with both Sharp score for narrowing ($r = 0.21$) and for erosion ($r = 0.32$) - but the correlations are weak.

HAQ score correlates also on a direct manner with Sharp erosion score ($r = 0.54$).

The T score levels correlates indirectly, in a significant manner, with the radiological parameters: the less T scores are, the higher are the values of Sharp scores for narrowing and erosion respectively.

Conclusion:

Determination and analysis of the Sharp score values for narrowing and erosion represents a reliable assessment of cartilage destruction in rheumatoid arthritis.

Key words. Rheumatoid arthritis, DAS28, VAS, NAD, NAT, BMD, HAQ.

STATISTICAL STUDY IN THE RECOVERY OF OSTEITIS PUBIS IN FOOTBALL PLAYERS



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Abstract

Introduction: Osteitis pubis is a constantly increasing affection among soccer players due to the increased number of training sessions and intensity, the increased number of matches (both in the national and international championships), the playing surface etc. All these aspects lead to a reduction in the recovery period, thus favoring the development of new pathologies.

Materials and methods: The statistical study is performed on a group of 35 male players (30 healthy and 5 male affected by osteitis pubis), aged 18 to 35. Both healthy and affected patients received initial and final testing, the tests being performed with a posturotest. Patients affected by this syndrome have benefited from personalized kinetic treatment (physical exercise, PNF techniques and massage).

Results: The results were analyzed using the two ANOVA specific hypotheses: the null hypothesis (the data does not show links between them), and the alternative (the data has links between them, so they are dependent). The results showed a correlation between the group of healthy players and those who benefited from the recovery plan.

Conclusions: Following the analysis we can say that the treatment plan had beneficial effects by reducing the symptomatology recorded at the plantar level. Parameters registered in initial testing (affected players) were close to the parameters recorded by healthy players. ANOVA tests helped in the processing and interpretation of the data obtained, thus obtaining a qualitative contribution to the recovery program, but also a socio-economic benefit to the patient by decreasing the duration of the treatment sessions and implicitly reducing the costs of the recuperation program.

Key words: osteitis pubis, kinetic treatment, ANOVA, football players

EFFECTIVENESS OF MINEROMEDICINAL WATERS OF TINTEIRO SOURCE IN BUCO-DENTAL CRENOTHERAPY, OURENSE (SPAIN)

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Abstract

Introduction:

On the right bank of Miño river and only at 4 km from the Ourense's main square, there is a minero-medicinal water spring, unique in its therapeutic virtues (bucco-dental and cicatricial crenotherapy). The number of people who daily visit this source is evaluated at 300, which emphasizes the importance of this water in oral cavity crenotherapy .

Material and methods:

I – First phase

An investigation-survey questionnaire was conducted among 200 people that visit the mineral water spring. The survey contains 50 questions, subdivided in various categories. This investigation allows to establish the local cartography, demographic situation and partner and professional status, material conditions of the cure, daily habits. At the end of the personal treatment, another survey is conducted to compare the results.

II – Search phase of bibliographic data and chemical composition

The work was realized by: Paul Couterier (France), Weissnfluh (Switzerland), Vergnes, in Casterá (France), Tsopikov in Sotchi (Russia), Boulanger, in Aix-Thermes (France) were checked .

Data from the Tinteiro source

Temperature	44,9 °C	Sulphide Index	2,88 mg/L
α Radiactivity	3317,0 mBq/L	Baregina	YES

III - Experimental work phase

20 patients who presented a severe gingivitis process were selected. The treatment was a cure of an hour for 20 days with the minero-medicinal water from the Tinteiro source. Slides to evaluate the gingivitis were made in the clinic of the stomatologist, at the beginning and at the end of the treatment

Results and conclusion: A remarkable improvement is observed in 45% of the patients, some improvement in 35% of the cases, and no improvement in 20% of the cases.

CHEMICAL CHARACTERIZATION OF TECHIRGHIOL THERAPEUTIC MUD



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Abstract

Introduction:

Matured mud or muddy suspensions with curative and / or cosmetic properties are complex mixtures of fine granulated materials, mineral or marine water and organic compounds with biological activity. In terms of their physical and chemical composition, peloids are complex heterogeneous systems consisting of two solid phases and a liquid phase. The solid phase consists of the crystalline skeleton and the colloidal component, and the liquid phase is the peloid solution that is the carrier of the therapeutic effect. The study aims to characterize Techirghiol's sapropelic mud both by determining the organic and inorganic composition of the constituent phases and by isolating some compounds of humic substances.

Materials and methods:

The distribution between the solid and liquid phases of the peloid of the Ca^{2+} , Mg^{2+} , Fe^{3+} cations, PO_4^{3-} anion, bioactive compounds of the protein, lipid and carbohydrate classes as well as the phosphatase activity of Techirghiol sapropelic mud are analyzed. The fractionation of humic substances was carried out by mud extraction in alkaline solution with the separation of humine and organic residues. The alkaline solution was brought to pH 1-2 with conc. HCl, precipitating humic acids. The fulvic acids left in the acid solution were determined spectrophotometrically. Fulvic acids were sub-classified by molecular weight using ethyl alcohol and those soluble in the hydro-alcoholic extract were determined spectrophotometrically.

Results and discussions:

An increased distribution of inorganic compounds in the solid phase of the peloid is observed which indicates their absorption involving the inorganic phase bound to the insoluble humic material. The ratio of the concentrations of inorganic substances between the solid phase and the liquid phase shows a variation in the order $\text{P} > \text{Mg} > \text{Fe} > \text{Ca}$. Organic substances reveal increased absorption of carbohydrates and proteins, which are mainly found in the solid phase as a result of biochemical transformations of natural organic matter, plant residues and animal waste during the humification process. Correlated with the high phosphorus content of the solid phase of the Techirghiol mud, the phosphatase activity of the solid phase is more than 6 times that in the liquid phase. As a result of fractionation has been found that the Techirghiol mud containing 5.065 mg/g humic acid, 0.110 mg/g of low molecular weight fulvic acids and 0.024 mg/g high molecular weight fulvic acids

Conclusions:

1. The values of some parameters of Techirghiol sapropelic mud composition and their distribution between the solid and the liquid phase were determined and the variance of the absorption in the solid phase for the inorganic compounds was $\text{P} > \text{Mg} > \text{Fe} > \text{Ca}$ and for the organic compounds Carbohydrates > Protein substances (including with catalytic activity) > Lipids.

2. A new specific fractionation scheme is proposed to separate and characterize spectrophotometrically the compounds of humic substances specific to peloids and Techirghiol sapropelic mud.

Keywords: peloid, sapropelic mud, humic substances, mineral composition, humic and fulvic acids

ANATOMOPATHOLOGICAL ASPECTS IN EXPERIMENTALLY INDUCED CHRONIC ARTHRITIS



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Abstract

Introduction: The purpose of this study was to provide an experimental model of chronic arthritis in small experimental animals (Wistar female rats) and to evaluate the efficacy of Leflunomide treatment on the evolution of a chronic inflammatory arthritic disease.

Material and method:

Taking into account the evolution of various chronic inflammatory diseases among young women or elderly, we have formed two groups of female Wistar rats: young and adults - aged between 1.5 months and 4.5 months. Arthritis was induced by injecting 1% carrageenan solution in tibio-femoral joint of experimental animals, 3 times a week for 4 weeks.

Leflunomide was administered at a dose of 20 mg / kg by gavage once at 2 days, for 8 weeks.

Results:

After 8 weeks of treatment, fragments were taken from the tibio-femoral joint, liver, myocardium - which were fixed in formalin solution and afterwards embedded in paraffin. The pieces of taken joints have been previously decalcified with trichloroacetic acid solution. The sections were examined under the electron microscope Olympus equipment.

Conclusions:

The study of the obtained results led to the following conclusions:

The intensity of inflammatory events in the group of young animals was higher compared to adults.

In all experimental animals, both young and adult, arthritic lesions persisted after treatment administration.

Liver and cardiac damage was revealed which suggests the toxicity of leflunomide.

Keywords: arthritis, Leflunomide, carrageenan.

IS IT OUT OF BED MOBILIZATION AN ITEM TO BE CONSIDERED IN THE INTENSIVE CARE UNITS – A META-ANALYSIS

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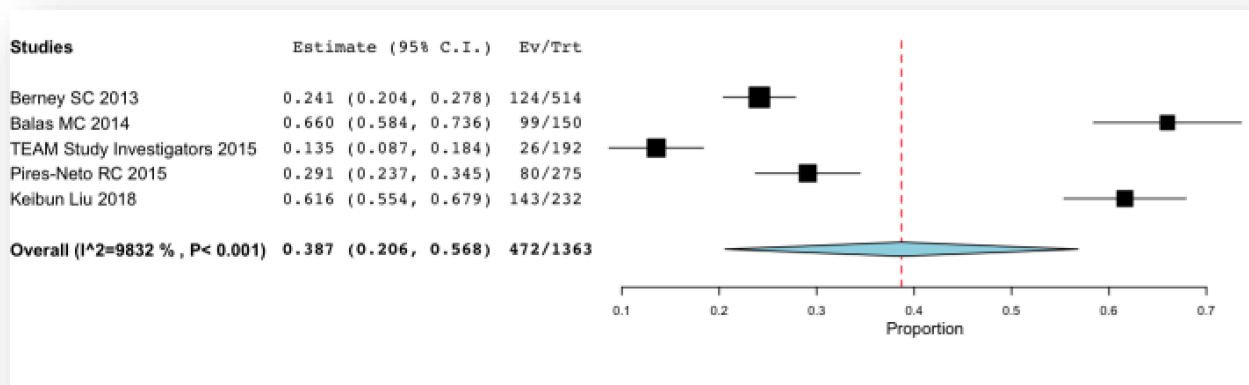
Abstract

Introduction: Early mobilization (EM) in ICU (Intensive Care Units) is considered to be a safety tool according with the latest randomized controlled trials (RCTs) results and the local recommendations; the use of active EM is not applied in large scale. The aim of our study was to see if out of bed session of rehabilitation were applied in ICU and if not what were the causes.

Material and method: In order to achieve our goal, a meta-analysis was conducted. The PubMed, PlosOne, clinicaltrials.gov were used as data base. The key words used in our web research were: ICU, EM, out of bed. Out of sixty-four studies only five met the inclusion criteria: to be RCTs, open access, to provide the information concerning the demographic and the pathology of the patients submitted to early active mobilization such as out of bed. For statistics. the OpenMetaAnalyst software was used with random effect pattern due to the high heterogeneity of the studies.

Results: From the total of 1363 patients (pts.) enlisted in the studies only 472 pts. had at least one session of active mobilization such as out of bed. Our final results (see fig.) did not sustained the use of active session such as out of bed in ICU.

Conclusion: Even though safety was reported as not an issue in EM of pts. from ICU, active session are to be reserved to those pts. without mechanical support and having certain pathologies.



EXTENSIVE THERAPEUTIC RECOVERY APPROACHES ON A POLITRAUMA PATIENT WITH COGNITIVE IMPAIRMENT, APHASIA AND SPASTIC TETRAPARESIS AFTER TRAUMATIC BRAIN INJURY

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Abstract

Introduction: Traumatic brain injuries, produced especially by car accidents, are the main cause of an increasing population suffering through cognitive and locomotor impairments which cause permanent dysfunctions and affect drastically their quality of life. In this respect an extensive rehabilitation program consisting in complex therapeutical approaches is mandatory to maximise patients' changes of recovery.

Materials and methods: This paper presents an extremely complex clinical case of a patient with reduced state of consciousness, mixed aphasia and spastic tetraplegia, dysphagia, gastrostomy, necessity tracheostomy, neurogenic bladder requiring an indwelling catheter, moderate stiffness in right elbow and knee, all of this due to a severe traumatic brain injury, TBI (fronto – temporoparietal bilateral concussion). She also associated a chest and abdominal injury, rib fracture (left c1-c11), fracture of the left scapula, spinal trauma T8-T9, all caused by a car accident (passenger 23.june.2017). The paper also focussed on the management approaches of the therapeutic recovery of a female patient, 41 years-old, hospitalized in our clinic division for predominant left side tetraparesis, cognitive disorder, communication disorder, complex cachexia. Among medical history problems, we mention Clostridium Difficile enteritis and recurrent urinary infections with Escherichia Coli, Klebsiella, Pseudomonas, treated based on antibiograms. The cerebral CT made in our clinic division revealed 1,8 cm hypodense area in the left frontal lobe, 7 mm bifrontal hygroma. Para-clinical, clinical and functional evaluation of the patient were made using the following evaluation scales: MMS, QOL, Asworth Penn, GOS, Rankin, FAC. This paper work is approved by THEBA Bioethics Committee (No.9181/11.April.2018).

Results: Due to a complex neuromuscular program, the patient showed a positive cognitive and motor development. At discharge, the patient had urinary control. Following the sequential evaluations made by thoracic surgeon, the tracheostoma is removed, resulting in a spontaneous breathing (Sat O₂=96-97% spontaneous). Initially, the patient becomes dysphasic then she can speak articulately and the minimum state of awareness becomes psycho-cognitive status. Deglutition becomes functional both for liquids and food and thus the gastrostoma is removed. Improvement in general well being is noticed and the patient gains weight. Functional: the patient takes active part in the recovery program, showing good tolerance in the wheelchair, can walk with a tall walking frame, wearing a tall brace on the left leg, assisted by a physical therapist.

Conclusions: This case is a classical example of a complex post traumatic pathology which benefited from a specific rehabilitation program with good results and high scientific impact.

Keywords: rehabilitation, traumatic brain injury, aphasia

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PLATELET RICH PLASMA FOR THE TREATMENT OF RADIAL AND MEDIAN NERVE INJURY

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Abstract

Introduction: Studies have already attempted the utility of Platelet Rich Plasma (PRP) injection in several different diseases, such as: nerve section, peripheral nerve repair, spinal fusion, bone formation, chondropathys, osteoarthritis, lateral epicondylitis, muscle, ligament or tendon injures, skin wounds, and others. The purpose of this review was to investigate the effect of the PRP injection in radial nerve section and median nerve compression.

Materials and methods: A systematic review was performed with the available literature, in English language, published in the last 7 years (2011-2018).

Results: The search in the PubMed, Medscape and Scopus database identified 8 articles about this specific issue. However, in trauma cases, only one study was found about radial nerve section (a recent 2018 case report). Regarding the compression of the median nerve (carpal tunnel syndrome, CTS), there were found 7 articles, including 115 patients, with mild to moderate (CTS) separated into 2 groups: 58 patients (PRP group, who received a single injection of PRP) and 57 patients (control group, who did not receive this treatment). In some articles, the evaluation was made after one month, in others at 1.3 and 6 month post-injection.

Conclusions: 1. In case of radial nerve section, after nerve sutured, PRP infiltration has the potential to enhance the healing process of radial nerve palsy.

2. PRP is a safe modality that relieves pain and improves disability (functionality) at the patient with mild to moderate (CTS).

COMPLEX STATUS IN AN OLD FEMALE PATIENT WITH CEMENT BIPOLAR ENDOPROSTHESIS HIP'S ARTHROPLASTY FOR OSTEOPOROTIC FRACTURE ASSOCIATED WITH OMOLATERAL SCIATIC NERVE SEVERE PARESIS AND LOWER LIMBS CHRONIC VENOUS INSUFFICIENCY COMPLICATED WITH DEEP VEIN THROMBOSIS AND RESPECTIVELY, BILATERAL FLU BRONCHOPNEUMONIA – CASE REPORT



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Abstract

Background: Osteoporosis is a generalized skeletal disease caused by the significant lose bone mineral density (BMD) and micro architectural bone deterioration. When women reach menopause, "the rate of bone loss increases to about 2% to 3% per year" and dramatically leads to fragility and progressive increase in the risk of fracture. In that order, the osteoporotic hip fracture has "a profound impact on the physical health and psychosocial wellbeing of patients", 50% of cases lost the ability to walk and 25% require home care. Associated co-morbidities in elderly patients with osteoporosis complications always occur to be a diagnostic and therapeutic challenge.

Matherials and Method: We present the case of female patient, 77 years old, who was hospitalized to The Teaching Emergency Hospital "Bagdasar- Arseni", Bucharest (hospital's Bioethics commission approval No: 9181 per April 11.2018) – The Neuromuscular Rehabilitation Clinical Division and also to The Emergency Hospital of Ilfov County, Bucharest – The Medical Rehabilitation Physical Medicine and Balneology Clinical Division in successive admissions between January and April in 2018. She suffered a cement bipolar endoprosthesis left hip arthroplasty in November last year, for osteoporosis hip fracture and left foot *varrus equin* with subsequent severe left sciatic nerve paresis (with incomplete known cause) and lower limbs chronic venous insufficiency with severe skin damages – stage C5 after Clinical Etiologic Anatomic Pathophysiological (CEAP) classification of chronic venous disease. The patient also had multiples co-morbidities: high blood pressure, chronic atrial fibrillation, bilateral knee osteoarthritis, secondary right shoulder osteoarthritis consequently to ancient road accident (associated with shoulder, brain and abdominal contusions). The patient was clinically evaluated using general clinical examination, joint and muscle testing and the following outcomes scores/scales: Functional Independence Measure (FIM) motor, modified Rankin scale, Lequesne score for osteoarthritis of the hip, Questionnaire of quality of life (QOL). She was para-clinically evaluated: X-rays as standard radiography, CT-scan, measurement of BMD with DXA-test; because of skin damages, it was not possible to perform the electro-diagnosis of left sciatic nerve. The patient received specifics drug therapies and a complex panel of kinesio and orthotic - therapies. During first admission, the patient had a deep vein thrombosis (DVT) episode for which she received heparin - therapy and subsequent NOACs-drugs and also flu and bilateral Broncho-pneumonia treated at Clinical Hospital "DR. Victor Babes".

Results: Despite these complications, the general status of the elderly patient and associated co-morbidities, there was a progressive increase in the outcome functional scores/scales. The patient performs walking on short distances with left leg's inflatable orthosis and therapist's support.

Discutions: The **particularity of this case** is the complex panel of co-morbidities and possible complications on geriatric patient, some of them vital that can act antagonistically with rehabilitation therapy of hip's arthroplasty status.

Conclusions: Rehabilitation therapy may increases the functional outcomes scores and improves quality of life to elderly patients with joint's diseases in addiction to achieve a good management of complications and co-morbidities.

Key Words: Hip arthroplasty, Osteoporosis, Deep vein thrombosis (DVT), Sciatic nerve paresis, rehabilitation therapy, elderly patient

ION MEASUREMENTS IN VARIOUS CAVES AND OPTIMIZATION OF THERAPEUTIC PARAMETERS

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Abstract

Introduction: The study investigated three different salt caves to get optimum parameters for deriving most efficient therapeutic treatments.

Materials and methods: For this, air-ion concentrations were performed using a Gerdien ion counter in Çankırı, Iğdır and Nahçıvan salt caves. Simultaneous air temperature and air humidity measurements were taken. To determine the ion constituent, air samples were taken to be investigated in ICP-MS.

Results: The highest ion concentrations were found in Nahçıvan and the lowest in Iğdır. The average ion concentrations were computed as 10000, 500 and 80 ions/cm³ in Nahçıvan, Çankırı and Iğdır, respectively. The caves indicated different environmental conditions such as, air temperature, indoor humidity, physical dimensions (cell height), and connectivity conditions to outdoor atmosphere. Air temperatures were also found highest in Nahçıvan (20°C). Indoor humidity was found largest in Çankırı (65%), followed by Nahçıvan (55%) and smallest in Iğdır (50%). The ICP-MS analysis is still on going.

Conclusions: Nahçıvan was the cave in which for a long time fuel based machinery has not been used. This no machinery duration was decreasing from Çankırı to Iğdır, being in parallel with the reducing ion concentrations. The air temperatures in Çankırı and Iğdır were also below Nahçıvan (15-16°C) during the measurements. Iğdır salt cave has the largest openings that led to the reduced air humidity values. Studies to get the optimum conditions for getting standardized Speleotherapy treatments are going on.

Key-words: Çankırı salt cave, Nahçıvan salt cave, Iğdır salt cave, Gerdien ion counter, climatic conditions

EFFICACY OF BALNEOTHERAPY IN BRONCHIAL ASTHMA – A SYSTEMATIC REVIEW–



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Abstract

Introduction: Asthma is one of the most frequent chronic diseases worldwide, which affects about 300 million people. Asthma was defined by the Global Initiative for Asthma (GINA) as a heterogeneous disease, (usually) characterized by chronic airway inflammation and a history of respiratory symptoms that vary in intensity with time, including wheezing, breathing difficulties and cough, along with a variable limitation of expiratory air flow. There are few published randomized trials regarding the efficacy of a multimodal pulmonary rehabilitation program in asthma, all of them having certain methodological limitations, so they were not taken into consideration in the development of international evidence-based guidelines for asthma. The objective of this retrospective analysis was to investigate the efficacy of balneotherapy in bronchial asthma.

Materials and methods: To perform this review, we searched Medline, Cochrane, ISI and Scopus databases for randomized clinical trials and meta-analyses relevant for this subject over the past 4 decades. The topics included in the search were: climatotherapy in asthma, halotherapy and salt mine therapy for respiratory diseases, aerosol therapy with hypertonic saline solution in bronchial asthma, and the use of sulfur, chlorine-sodium, bicarbonate, iodine, bromine and radon mineral waters in the form of aerosols for the treatment of bronchial asthma.

Results: The German National Asthma Disease Management Guidelines recommend pulmonary rehabilitation in patients with asthma if the physical, mental or social consequences of the disease are compelling and persist during daily life despite adequate medical therapy. The efficacy of the essential individual components of pulmonary rehabilitation, such as patient education, respiratory physiotherapy, aerobic exercise training, was evidenced in several controlled randomized trials. Also, a limited number of observational studies published in the international literature showed positive effects regarding quality of life, clinical symptoms, physical function, exacerbations and the use of health care resources. As part of pulmonary rehabilitation, balneotherapy using salt mine therapy, halotherapy, and chlorine-sodium, sulfur, iodine, bromine mineral waters has a special place. Fundamental studies in favor of thermal treatment have generated only indirect opinions. Following the inquiry conducted by the French National Health Care Service in 3000 patients over a 3-year period starting with 1983, it was found that this treatment reduces medical consumption, the number of physician visits and hospital health care in many cases.

Conclusions: The efficacy of treatments with natural therapeutic factors in bronchial asthma can be demonstrated. However, further randomized trials, including in our country, as well as the preparation of patients for continuing medical rehabilitation in spa resorts for the treatment of respiratory diseases are required.

SALINE AEROSOL INFLUENCE ON BIOCHEMICAL PARAMETERS IN LABORATORY ANIMALS AND HUMAN SUBJECTS

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Abstract

Introduction. The purpose of this study is to determine the effect of experimental halotherapy on blood biochemical parameters as well as on hydroelectrolytic balance in patients with bronchial asthma and Wistar white rats with induced pathology.

Materials and Methods. The study was conducted on a number of 20 Wistar adult rats sensitized with ovalbumin and 18 patients, assigned to the control batch and experimental groups. Subjects from the experimental groups underwent 21-day hallo therapy. Parameters of hydroelectrolytic balance were determined before and after the cure of halotherapy. Thus, the animals were kept for 24 hours in individual metabolic cages without food and free access to a saline solution. After 24 hours, the volume of water and the amount of sodium ingested and the volume of urine removed were measured.

Results. In the case of human subjects, the urine was collected on different days during the halotherapy session. Concentrations of sodium and potassium in the eliminated urine were determined by flamephotometry, and from these data the values of the renal elimination electrolytes were calculated, representing the mineralocorticoid response of the organism under the given experimental conditions. The biochemical parameters were determined before and after the cure of halotherapy.

Conclusions. On white Wistar rats the halotherapy resulting in the normalization of most parameters of the hydroelectrolytic balance, and on human subjects leads to a process of adaptation of the renal function during the first 8 to 10 days of exposure. Also, most of the studied biochemical parameters were in the range of normal values, with a slight downward trend relative to pre-treatment halotherapy.

BALNEO-SPELEOTHERAPY PERSPECTIVES



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Abstract

Introduction. Speleotherapy – a special kind of climatotherapy, uses the certain conditions of caves and salt mines to cure several diseases, especially respiratory and skin diseases. The cave air is very low on dust, which could cause allergic reactions or asthmatic attacks. This fact reduces any kind of irritation; the symptoms of the diseases are reduced or eliminated completely, while the patient is in the cave. But that does not explain how it should have a longer lasting effect. Curing asthma involves spending 2-3 hours a day underground in subterranean caves or salt mines over a 1-2 month period. An old study describes a speleotherapy course, which was 4 hours a day for 6-8 weeks, with 100 COPD (Chronic Obstructive Pulmonary Disease) and asthma patients and reported improvement that lasted 6 months to 7 years (Skulimowski, 1965). The modern evaluation of the health, the welfare, and the quality of life imposes the continuation and development of

scientific study for the establishment of action mechanisms and curative effects of the natural therapeutic factors. There are considered as a priority the studies on the methodology and effects of “health cures”, which represent the most important domain of the primary prophylaxis of the major diseases from the pathology related to the life style of civilization from the new millennium.

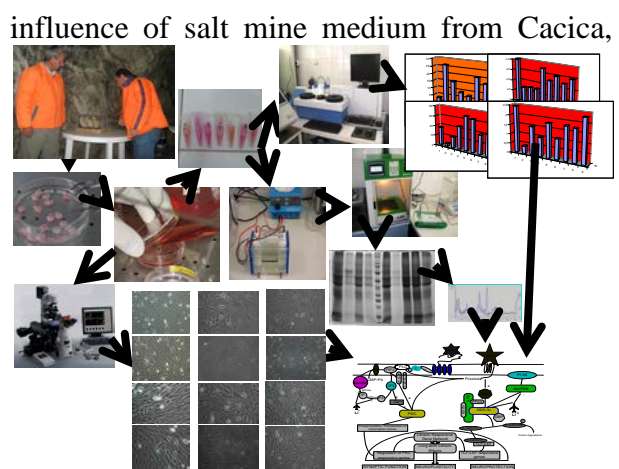
Methods. Using pulmonary and dermal fibroblasts cultures to verify the therapeutic properties of saline mines medium represents an innovative and scientific new way to establish the medical methodology of preventing, treating and recovery of patients with various skin and pulmonary problems.

Results. The current study was designed to investigate the influence of salt mine medium from Cacica, Turda and Dej Salt Mines upon the cell morphology and electrophoretic expression of pulmonary and dermal fibroblasts in vitro obtained from Wistar rats tissues, in normal and Ovalbumin - “asthmatic” conditions.

Fibroblasts were cultured from lung and dermal parenchyma of control, ovalbumin-sensitized, and speleotherapy treated rats after ovalbumin-sensitization. Fibroblasts shape in culture can vary in accordance with the substrate, which on they is growing, and the space they have for movement.

Conclusion. Wistar rats sensitized with Ovalbumin have a low number pulmonary fibroblasts output cultures, with a more sensitive morphopatologic level. The morphological observations confirmed by the electrophoretic analyses,

demonstrate through rising of the expression of many proteins and of total protein amount that the exposure of Ovalbumin-sensitized animals to the saline medium from Cacica and Dej Salt Mines is reversing the cells morphopathology of pulmonary fibroblasts in cultures;



SPELEOTHERAPY CASE PRESENTATION – TURDA SALT MINE



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Abstract

Introduction. The presence of a large salt deposit with big dimensions in the north of Turda had influence the geomorphology and the biodiversity of the area, but in the same time had generated a multitude of natural resources used today in balneary therapy.

Turda Salt Mine is the result of salt extraction in the period 1690 – 1932 and represents an ensemble of galleries and underground chambers of big dimensions.

The salt mine had become a touristic attraction in 1992.

Between the ensemble of mining works are conserved and can be visited conical and parallelipipedic shape exploitation chambers beside the technical works used for miners circulation and salt transportation.

Beside the spectacle offered by visiting the old exploitation chambers, Turda Salt Mine shows interest also as a balneary destination.

Therapeutic properties of underground environment are different from a salt mine to another and there can be changes also differences between the exploitation chambers of the same salt mine.

Methods. The curative effects of salt mine microclimate for the respiratory disease treatment have been evaluated in several stages, through studies which evaluate the physic-chemical and microbiologic parameters of underground environment. It followed the experimental studies made on batch of laboratory animals with induced bronchitis asthma and in the end the study was made on human patients. The results have been statistical interpreted and represents the fundament for the conclusions looking at the possibility of using Turda Salt Mine in therapeutic purposes.

Results. The last studies have evaluated the influence of intense touristic traffic over the underground microclimate and the investigation of physic-chemical and microbiologic of Joseph chamber taking in consideration the opening of a new section of speleotherapy.

Conclusion. Salina Turda is a modern balneary-touristic destination, with specific characteristics which completes this type of European network.

THE THERAPEUTIC VALUE OF BAZNA NATURAL FACTORS

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Abstract

Introduction. The name of Bazna was mentioned for the first time in a document on 18 February 1302. The history of the resort goes back to 1671, when some shepherds lit a fire to warm up and discovered by chance the natural gas deposit from Bazna. Its concentrated athermal mineral waters contain chlorine, sodium, iodine, bromine with a total mineral content of 17.1-34.5 g/l (the Bazna salt is extracted from the spring water).

Material and method. Mud is extracted from the bottom of the salt lakes in the spa resort (it has a mixed origin, with predominant mineral substances brought to the surface by the spring water sedimenting in the lakes. From the spring water, the Bazna salt is extracted through evaporation. There is a mutual interdependence between processes that take place in the water and those occurring in the mud. Mud from these pools is sulfurous mineral mud with a highly mineralized imbibition solution. The presence of iron hydrosulfide as well as organic substances creates in the sediment mass a reducing saline environment of sapropelic nature but with a high content of inorganic substances. The physical properties of mud formed in the pools are: density, granulometry, caloric properties with values ranging within the limits required by mud therapy. The amount of nitrogen found in the mud of these pools has seasonal variations, being directly related to decomposition processes. Humic acids, synthesis products resulting from the degradation of lignins and other organic compounds, have low values.

Results. The pharmacodynamic effects induced by salt baths are largely due to iodine or bromine, when these are present in the mineral water. Among Romanian mineral waters, Bazna water contains iodine amounts of about 3.8 mg/l. Iodine salt baths improve peripheral circulation. After a course of treatment with iodine salt waters, the salt envelope formed in the skin gradually releases the absorbed ions in circulation, ensuring the pharmacodynamic effects that occur post-balneophysiotherapy. In the presence of iodine, the transport of H⁺ in the cellular respiratory chain is activated and cytochrome oxidase activity is stimulated. Through the activation of circulation, the stimulation of catabolism and defense processes, iodine contributes to the active resorption of inflammatory processes. Studies conducted with radioactive Br82 have demonstrated the particular sensitivity of the nerve cell to bromine. After absorption, bromine replaces chlorine in extracellular spaces. Bromine is excreted through urine slowly, over weeks. Since the renal tubule preferentially reabsorbs bromine over chlorine, the urinary Br/Cl ratio is lower than the plasma ratio.

Conclusions. The natural therapeutic factors specific to this area are salt iodine mineral waters, Bazna mud, Bazna salt, continental climate. The resort is mainly intended for the treatment of locomotor and gynecological systems.

INTENSIVE OCCUPATIONAL THERAPY PRODUCES A FASTER IMPROVEMENT IN UPPER LIMB MOTOR FUNCTION OF PATIENTS WITH SUBACUTE ISCHEMIC STROKE

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Abstract

Introduction: In ischemic stroke, upper limb motor deficit is one of the main contributors of disability. Recovery of motor function relies on neural plasticity – a spontaneous process, which could be enhanced by rehabilitative strategies. The first two weeks after stroke are the critical period during which the brain is most receptive to rehabilitation strategies.

Material and method: We identified a group of 20 patients with subacute ischemic stroke in the middle cerebral artery territory with comparable NIHSS scores, admitted in our Rehabilitation Hospital. The severity of upper limb motor deficit was assessed in each patient with Action Research Arm Test (ARAT), an instrument which permits quotation in points of motor deficit's intensity. We included only patients with ARAT score at inclusion between 22 and 42 points, suggesting a limited functional ability and important motor deficit in upper limbs. The patients were divided into two groups: one group (10 patients) received a standardized rehabilitation intervention (1 hour/day kinesiotherapy and 1 hour/day occupational therapy for 5 days/week, for 2 weeks), and a second group (10 patients) receiving the same rehabilitation interventions plus one additional hour of occupational therapy. Patient's motor abilities were assessed at inclusion and day 15, at discharge, using the ARAT score, stroke severity was assessed using NIHSS score.

Results. Our pilot study shows that the group of patients with one additional session of occupational therapy have a significant improvement in upper limb function assessed by ARAT test, compared with the group of patients with standard physical and occupational therapy. The NIHSS score also improved in both groups, but without significant difference between them.

Conclusion. Intensive occupational therapy has a significant contribution in improving upper limb functionality in patients with subacute ischemic stroke. ARAT score is a useful instrument in assessing upper limb functionality and in detecting even mild improvements of motor deficit obtained by various rehabilitation techniques.

VISCOSUPPLEMENTATION IN PATIENTS WITH KNEE OA AND CHRONIC ANTICOAGULANT THERAPIES- SECURITY PROFILE



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Abstract

Introduction

Aged population presents a high prevalence rate of osteoarthritis (OA) and cardiovascular pathology, anticoagulant therapy being frequently used in this group. Intra-articular Hyaluronic acid (HA) injections have been successfully used to improve joint lubrication and to modulate joint inflammation and their administration requires the use of thick needles of 21-22g. The aim of the study was to evaluate the security profile of intra-articular ultrasound guided injections (USGI) using thick needles in patients on current efficient anticoagulant therapy.

Material and method

Patients diagnosed with knee OA (Kellgren 2-3) and cardiovascular pathology requesting chronic anticoagulation with Vitamin K antagonists were recruited in the outpatient clinic to receive one viscosupplementation intra-articular USGI. All patients presented chronic refractory knee pain after previous systemic/ local NSAIDs and other painkillers, according to current protocols. Only patients with mild knee effusion/ synovial hypertrophy, no popliteal cyst at US examination, and efficient INR between 2 and 3, determined in the same day, were included. No switch from anticoagulant Vitamin K antagonists to Heparin was made. The US evaluation was repeated post procedural immediately, after 45 minutes and 72 hours. Informed written consent was signed by all patients.

Results

Thirty-two patients (78.12% women, age 65±8.3 years) with knee OA received unilateral one USGI with monodose HA. In all patients, the viscosupplementation agent was deposited strictly inside the joint space under continuous visual US control. No iatrogenic bleeding inside the joint was noticed after the interventional maneuver in 100% of the knees. No local injection-site nor systemic reactions did occur when patients were checked at 72 hours and no further reports of injection linked (technical or product) side effects were identified.

Conclusion.

Intra-articular injections with thicker needles (21-22g) have a very good safety profile in patients with current efficient anticoagulant Vitamin K antagonists. There is no need to stop anticoagulant therapy or to switch on Heparin previous to the USGI when INR is lower than 3.

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RESEARCHES REGARDING MODERN REHABILITATION APPROACHES IN TRAUMATIC BRAIN INJURY TREATMENT FOR BALANCE DISTURBANCES THROUGH THE SENSITIVE SYSTEM INTERVENTION, IN CHILDREN AD ADOLESCENTS

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Abstract

Introduction: Traumatic Brain Injuries (TBI) are caused by different accidents (car, work-related, sport accidents) and can be acute, sub-acute or chronic, leading to a series of imbalances and neurological post-lesion dysfunctions, from which balance disturbance can be named.

Material and method: We surveyed TBI patients at the sensitive system intervention (visual and proprioceptive) in Stabilometric Therapy watching the correct posture, the body oscillations' and the static evolution of the center of gravity, to proceed as much as possible towards the physiologic values reporting to the base support. There was observed a study group made of 7 children, aged between 5 and 18 years old, on the course of a two year period of time in which they received stabilometric therapy in our clinics' division, and were evaluated at admission and discharge (2 weeks period). We will use an advanced apparatus device to stimulate and train the static and dynamic balance, through VR projection on a desktop, where well-defined cinematic patterns are identified/asserted to oppose the tendencies to disequilibrium deviation, consecutive to pathology approach with the stimulation of redressing and balancing reactions, including tracing the modified correction adaptation of muscle/postural tonus necessary to gain the correct posture and movement engrams. The patients were put on a pressing plate with sensors in front of a monitor. There were applied postural corrections in isometry and through the visual and proprioceptive system, they could follow their activity and correct it each time they saw a mistake.

The patients' evaluation was made following the spatial and temporal parameters and there was extracted the following data: 1 – epileptic area; 2 – perimeter; 3 – antero-posterior standard deviation; 4 – medio-lateral standard deviation and body oscillations.

Results: In TBI patients, the obtained results showed improvement in various spatial and temporal parameters: epileptic area – all 7 patients, perimeter – 7 patients, antero-posterior standard deviation – 7 patients, medio-lateral standard deviation – 7 patients and body oscillations – 5 patients.

Conclusions: After this survey we noticed that in cases of TBI patients the proprioception, postural stability and the ability to respond in appropriated time to different and complex tasks, improved significant.

Key words: stabilometric therapy, proprioception, rehabilitation, traumatic brain injury

PROGRESSIVE TETRAPARESIS WITH LATE ONSET, LUMBAR RELAPSING SCIATICA, CERVICAL AND LUMBAR SPINAL STENOSES, ASSOCIATED IN ADULTHOOD WITH VERTIGO AND ATAXIC PHENOMENA, DIAGNOSED WITH ARNOLD CHIARI MALFORMATION IN PRESENERESCENCE – COMPLEX CASE REPORT



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Abstract

Introduction: Arnold Chiari Malformation (ACM) is a congenital disorder which consists in a downward displacement of the cerebellar tonsils through the foramen magnum towards the spinal canal^{2,3}. The term was first introduced in 1981 by the *Austrian* pathologist, *Hans Chiari*, with help from German anatomy professor, Julius Arnold. The *disease occurs* in only 1 in every 1.000 births with a female predominance. Based on the gravity of this malformation, the symptoms appear in the adolescence or adulthood¹. This disorder appears to be due to a fetal developmental failure of the brain or the spinal cord, caused by a genetic mutation or a maternal diet that lacks certain nutrients; in exceptional cases, this can happen because of injury, infection or exposure to toxic substances. From an anatomical and morphological point of view, AMC can be classified in 4 types (I-IV), the most common being the first two^{1,4}.

Material and methods: The authors want to bring attention to a case of a female patient (based on her signed inform consent), known from adolescents with idiopathic thoracic-lumbar scoliosis. In maturity the patient is progressively presented with muscle weakness, hypotonic tetraparesis type, with a paraparesis predominance; associated with balance troubles and coordination, vertigo, occipital headaches – episodes joined with nausea and tongue paresthesia. After the imagistic examination, the diagnosis has been established as type I Arnold Chiari Disease.

Results: The patient followed conservatory treatment recommended by the neurologist doctor (neurotropic drugs, peripheral vasodilator drugs, antiplatelet drugs, dietary *supplements*) and she is checked in annually at our Department in Eforie Sud including with complex rehabilitation treatment (heliotherapy sessions, hydro-/thermo-therapy procedures, antalgic electrotherapy, massage therapy and kinesiotherapy) with positive evolution by decreasing pain symptoms.

Conclusions: Medical management of patients with ACM is complex and requires the enablement of several doctors from different medicine fields (neurology, medical rehabilitation, orthopedics, medical imagistic), and the diagnostic of this disease must be taken into consideration if the patients develop: headache, lack of balance and coordination, vertigo, muscle weakness (sometimes associated with Hydrocephalus, Syringomyelia, Spina bifida or Kyphoscoliosis).

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A CLINICAL STUDY REGARDING THE IMPROVEMENT OF SYMPTOMS AND THE TIME EFFICACY OF TREATMENTS PERFORMED IN BĂILE TUȘNAD BALNEOCLIMATIC RESORT

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Abstract

Introduction: Băile Tușnad balneoclimatic resort is situated in the south of the Ciuc depression, at an altitude of 625-655 m. The natural therapeutic factors used at the S.C. Tușnad S.A. treatment facility are hypotonic carbonated mineral waters containing sodium chloride, calcium, magnesium, iron, carbon dioxide, with a total mineral content of 0.68-17.86 g/L, which are traditionally used for their vasodilator effects in the prevention, therapy and rehabilitation of cardiovascular patients, as well as mofettes and a relaxing sedative bioclimate. Although treatments have been performed for at least 5 decades in this resort, so far there are no data regarding the time effects of these medical rehabilitation treatments and procedures carried out in Tușnad resort.

Material and method: Therefore, the aim of this study was to investigate the patients' perception of their quality and efficacy, especially since many patients come here once or even twice a year for treatment. Thus, in the period October-December 2017, a study was conducted at S.C. Tușnad S.A. which included 394 subjects, patients of the treatment facility. These were aged between 39 and 87 years. The geographical distribution of the patients spanned the entire territory of Romania, with the predominance of Harghita, Covasna and Mureș counties, and in terms of the living environment, 43.91% of patients lived in rural areas and 56.09% lived in urban areas. Before treatment, the patients were evaluated by a questionnaire specially designed to investigate various clinical data regarding the efficacy of treatments in the resort.

Results: The answers of patients who visited the resort regularly (once and/or twice a year) showed the fact that the most important clinical symptom that improved was pain (61.29%), followed by quality of life (23.66%), but there was also an improvement in the quality of gait and an increase in the walking distance (10.22%).

Conclusions: The time period required to perceive the effect of treatment was two weeks for the majority of the analyzed persons (47.31%). Over 60% of the questioned patients indicated a period of about 6 months after the completion of treatment during which they felt better and the intensity of pain was tolerable.

ACETABULOFEMORAL IMPINGEMENT THROUGH “OS ACETABULI”

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Abstract

Introduction: “Os acetabuli” is a bone fragment near the acetabular rim and it can be an unfused ossification center, a fracture of the acetabular rim or an ossification of the labrum. The acetabulum is formed by the fusion of multiple prime and accessory ossification centers which can appear until the age of 6. Until the age of 18-20, these centers should fuse and form a unitary structure. Beside unfused ossification centers, “os acetabuli” may result following a poorly consolidated acetabular rim fracture. Although most “os acetabuli” are small and asymptomatic, there are cases where it can be quite large so as to participate at the “impingement” of the acetabular rim and articular instability.

Objectives: Emphasizing the importance of balneary treatment with Techirghiol areal specific therapeutic factors, associated with physical-kinetic treatment in acetabulofemoral joint pathology, caused by a rare anatomical variant encountered in specialty literature.

Determination of the origin and clinical consequences of the existence of “os acetabuli” bone structure and emphasizing the importance of radiological examinations.

Material and methods: Researching the most important international biomedical databases: Medline, Embase, Database, PubMed and Cochrane to highlight the clinical importance of this anatomical cause in acetabulofemoral joint pathology.

Clinical case study: hospitalized patients within Techirghiol Rehabilitation Balnear Sanatorium.

Results and conclusion: Following imagistic interpretation, correlated with anamnestic data and objective exam, we can conclude that the bone fragment found on the X-ray radiography is indeed an “os acetabuli” bone formation and not an acetabular rim fracture or ossification of the joint labrum.

CLINICAL PARTICULARITIES AND FAVORABLE NEUROREHABILITATION OF A PATIENT WITH A RARE NEOPLASM (SWEAT GLANDS ADK) OPERATED, MULTIPLE VERTEBRAL METASTASES AT 2 YEARS AFTER INTERVENTION, SURGICAL AND RADIOTHERAPY TREATED

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Abstract

Introduction: Sweat gland adenocarcinoma is an extremely rare neoplasia whose management and treatment are still evolving. The only curative therapy is wide local excision. Many patients have metastasis at the time of the diagnosis, mainly because this neoplasm has been misdiagnosed as some benign skin lesions. The clinical features of this tumor are not distinctive, and lesions have been reported to occur in several areas with the axilla appearing to be the most commonly involved part. It has a high incidence of local recurrence and lymph node, bones and lung metastasis frequently in the first 2 years.

Material and method: Having the patient and TEHBA Bioethics Committee approval no. 9181/11.04.2018, we will present a case of a 60-year-old woman who has a clinical history of an adenocarcinoma of the left axillary sweat glands operated in 2015 for which no oncological treatment was followed. Two years later she is admitted to the Neurosurgery Department of SCUBA where the diagnosis of T12-L1-L2 vertebral bone metastases is established, for which she is operated by osteosynthesis. She is hospitalized in our Clinic presenting incomplete AIS / Frankel C paraplegia with T12 neurological level, sphincter disorders and lumbar pain.

Results: The evolution is favorable, the patient reaches incomplete AIS / Frankel D paraplegia, walks on short distances with a supporting frame and regains sphincter control. All clinical and para-clinical aspects will be discussed (the patient history, the neural, muscle, joints and kinesiology exam, specific rating scales, the laboratory and imaging tests, medical and kinesio-therapeutic treatment) to offer an comprehensive overview of the case issue.

Conclusions:

Despite the aggressiveness of this rare form of neoplasm, adenocarcinoma of sweat glands, reached an advanced stage with multiple secondary determinations, the evolution of the patient's condition during hospitalization in our clinic was favorable. However, the prognosis remains reserved due to the fast pace of advancement of the disease, as well as limited knowledge of the treatment of this type of cancer.

DIFFICULT PHYSICAL REHABILITATION IN A PATIENT WITH DISC HERNIATIONS AND MULTIPLE COMORBIDITIES

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Abstract

Introduction: One of the most frequent diseases of the century, disc herniation appears when degenerative processes occur on the intervertebral discs or by trauma, and can affect any segment of the spinal column.

Materials and methods: We present the case of a 50 years old patient, with disc herniations at C2-C3, L4-L5 and bilateral sciatic, vertebral compression and other health issues (high blood pressure, dyslipidemia, obliterative arteriopathy, chronic bronchitis, histiocytosis X). The patient came for cervical pain radiating on both arms, with symmetrical paresthesia, low back pain radiating on the sciatic nerve territory and limitation of the spine movements. Para-clinical investigations included usual blood tests, right shoulder X-ray, cervical and lumbar spine X-rays. Also, we completed the investigations with cervical and lumbar MRI.

Results: Considering the mechanical type of pain and the para-clinical findings, we initiated symptomatic treatment using NSAI, paracetamol and also specific treatment for his other diseases.

Because of the numerous comorbidities, such as distal sensitive neuropathy, obliterative arteriopathy and the ischemic heart disease with severe angina, the physical rehabilitation proved to be difficult to endure. In spite of his several rehabilitation procedures, there were no improvements but an aggravation of the patient's symptoms during the kinesio-therapy and physiotherapy sessions.

Conclusions: Although in the mechanical affectation of the spine, physical rehabilitation can lead to major improvements in the quality of life, the results depend on the patient's other diseases. Also, the level of education and motivation to improve his condition can be important factors. In this case, physiatry didn't rise to the expected outcome.

Considering his plethora of diagnostics and the fact that analgesics in high doses had a limited effect on his symptoms, we consider that the best treatment in this case involves a good balance between medication, personalized rehabilitation procedures and also educational and psychological counseling.

PSYCHO-COGNITIVE SYNDROME, BLINDNESS AND TETRAPLEGIA AFTER SEVERE TRAUMATIC BRAIN INJURY IN POLYTRAUMATIC CONTEXT (ROAD ACCIDENT) WITH FAVORABLE RECOVERY OF COGNITIVE AND MOTOR DEFICITS

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Abstract

Introduction:

We live in a multisensory environment and the interaction between our genes and the environment shapes our brains. Cortical blindness as a result of head trauma (to the brain's occipital cortex) is a rare phenomenon and can be a total or partial loss of vision in a normal-appearing eye. How patients will adjust to the loss of vision and its consequences might be a challenge let alone if they have mobility impairment (tetraplegia) as well. Adaptation and reintegration of patients into society after motor recovery in the context of visual sensory deficit is mandatory. Cognitive and behavioral changes, difficulties maintaining personal relationships and coping with school and work are reported by survivors as more disabling than any residual physical deficits. As with all rehabilitation, the goal is to help the person achieve the maximum degree of return to their previous level of functioning.

Material and method:

Having the patient and TEHBA Bioethics Committee approval No.9181/11.04.2018, we will present the evolution of a case with posttraumatic spastic tetraplegia post severe traumatic brain injury, blindness post traumatic bilateral occipital lesions and psycho-cognitive syndrome. Clinical and para-clinical aspects will be discussed (patient history and clinical examination, results of imaging and laboratory tests, the nerve, muscles, joint and kinesiology exams, specific rating scales, both medical and kinesio-therapeutic treatments).

Results:

We will address the case in terms of particularities and treatment approach (neurorehabilitation of a motor deficit in the context of a major sensory deficiency) and evolution during hospitalization.

Conclusions:

Trauma has been known to result in cortical blindness but the exact pathophysiology remains unknown and remains a matter of continued debate. Cortical blindness may occur after trauma, however, most cases regardless of etiology, are reversible and have no long-term sequelae. While TBI can cause long-term physical disability, it is the complex neurobehavioral sequelae that produce the greatest disruption to quality of life. As with all rehabilitation, the goal is to help the person achieve the maximum degree of return to their previous level of functioning. In the setting of polytrauma, a careful ophthalmologic and neurologic examination of the trauma patient, together with a high index of suspicion, is necessary for the diagnosis of this condition. Heightened awareness of the causes should be followed with appropriate imaging and management.

CORRELATIONS OF JOINT BALANCE WITH THE PERCEPTION OF HEALTH, ANXIETY AND DEPRESSION IN PATIENTS HOSPITALIZED IN THE OCCUPATIONAL DISEASES DEPARTMENT



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Abstract

Introduction: Quality of the medical act, in relation to the patients' needs and expectations, requires evaluation of both the muscular and joint balance, but also of the emotional psychological status, and the quality of life, especially in hospitalized patients.

Materials and Methods: On the day of discharge, patients admitted to the Occupational diseases department voluntarily participated in the evaluation of the joint and muscle balance, completing the Hospital Anxiety and Depression Scale (HAD) and the Short Form 36 questionnaire for self-assessment of health status.

The joint balance by measuring the distances and using the goniometer included the following joints: cervical column, lumbar column, shoulder, elbow, forearm, fist, hip, knee and ankle. The manual muscular check included the main muscular groups of the above-mentioned joints. The study was conducted in two distinct time frames: 11 Dec 2017-31 Dec 2017 (Lot A) and 8-22 January 2018 (Lot B). Patients with Karnofsky performance status <70 were not included.

Results: Of a total of 37 patients discharged in December, 5 had the Karnofsky score <70, 13 patients participated in the study (Lot A). Of a total of 82 patients discharged in January, 3 had the Karnofsky score <70, 23 patients participated in the study (Lot B). The mean scores of the measured joint score fall within the normal range for the respective joints, the muscular balance in patients revealed a normal muscular force, only in 5 patients, localized, this was acceptable. The significant correlations obtained symmetrically in both joints in both groups were as follows: the social function correlates negatively with joint mobility by flexion of the knee (group A, $p = 0.13$ in both knees and in B at the right knee $p = 0.037$ and left knee $p = 0.034$). The perceived pain correlates positively with the degrees of joint mobility of the forearm supination (lot A; $p = 0.01$, bilaterally and in lot B on the right $p = 0.031$ and left $p = 0.048$). The difference in absolute value between joint mobility in left versus right in similar joints significantly correlates positively as follows: by flexion in the elbow joint with the score of depression ($p = 0.017$) and that by lateral flexion in the spine with the energy $p = 0.025$, mental health ($p = 0.017$) and limitations of activity because of emotional cause ($p = 0.014$). Muscle and joint balance completed the diagnosis in 5 cases undetected by initial history and clinical examination: vicious callus after forearm fracture, meniscal lesion, adhesions after sectioning of palmar flexors, lumbar disc herniation.

Conclusions: The parameters of joint and muscular balance, falling within normal ranges, in patients admitted to the department of occupational diseases having multiple, predominantly respiratory and cardiovascular comorbidities, often having associated joint pathology, do not make significant correlations with anxiety, depression and parameters of SF36 functionality subscales. Results obtained on small groups, even if they are consistent, need to be interpreted and validated on larger samples. The joint and muscular balance, as well as patients' perception of physical and emotional functioning, especially in those with osteomuscular disorders, are useful both by completing the diagnosis and by being a standard for assessing the quality of the medical act.

Key-words. joint balance, quality of life, anxiety, depression, occupational diseases.

THE EVOLUTION OF KNEE OSTEOARTHRITIS UNDER COMPLEX RECOVERY TREATMENT ASSOCIATED WITH BALNEAL THERAPY AND JOINT INFILTRATIONS



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Abstract

Introduction

Knee osteoarthritis affects over 48,6% of the population between 55 and 70 years old, being a degenerative type of affection which leads to invalidity and joint instability.

The treatment of knee osteoarthritis is complex and it starts with medical treatment followed by the physical-kinetic treatment and it ends with the invasive joint infiltrations treatment. The therapeutical solution is enhanced by imagistic investigations but it is decided through mio-arthrokinetic clinical examination.

Material and method

The present paper presents 4 cases of knee osteoarthritis hospitalized at Techirghiol balneal and rehabilitation sanatorium throughout a period of 2 years, counting at least 3 successive hospitalizations which have benefited of complex recovery treatment and joint infiltrations.

Results and discussions

The evolution of the knee osteoarthritis cases under balneal, physical and kinetic treatment was constant and it lead towards progressive improvement.

Conclusions

Balneal treatment accompanied by joint infiltrations with hyaluronic acid and blood platelet enriched plasma represents the best choice for joint protection and to maintain joint mobility in normal limits.

Key words: knee osteoarthritis, balneal treatment, joint infiltrations

POST-ACCIDENT WORK ABILITY THROUGH THE LENSES OF MEDICAL RECOVERY. THE CASE OF A PUBLIC OFFICER FROM THE SANITARY INSPECTION

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Abstract

Introduction: From a medical point of view, assessment of the work capacity, i.e the worker's ability to work in the workplace in a profession or function, follows a legally-enforced procedure, reporting to and avoiding the risks and overworking that represent dangers for the employee's health.

Materials and Methods: We present the case of a senior inspector in the sanitary inspection who suffered an accident through fracture of the inferior member, and where strict application of the legal norms led to temporary restriction of the right and attributions of the workplace.

Results: As a consequence of an accident by falling with the trochanteric diaphysis fracture of the left femur, operated (07.12.2016), the employee - an inspector in the sanitary inspection- followed medical rehabilitation procedures after the surgical intervention and at 3 months after surgery he requested to be readmitted for work. Employee's walking to the workplace with the help of the walking stick caused the specialist in occupational medicine to recommend temporary adaptation to work for 3 months with avoidance of prolonged walking and whenever tasks required thematic inspections in socio-economic units, working only in a team with taking over by the team mates of those tasks that require movement to different workplaces (rough terrain, slippery surfaces, climbing). The employer's inability to apply these recommendations (organization chart and work characteristics within the sanitary inspection department) required reappraisal of work ability with the establishment of a conditional fit for work, with temporary adaptation of the job for 3 months with avoidance of walking during thematic inspections in socio-economic units and work only at the headquarters of the institution. These work ability assessments over the course of 3 weeks (04.03.2017-21.03.2017) allowed the employee who, throughout this period underwent medical recovery procedures (laser therapy, kinesiotherapy) to give up the walking stick, receive treatment from the recovery specialist (continuation of kinesiotherapy, resumption of professional activity, need for daily walking as part of the kinesiotherapy program), which allowed him to appeal the fit-for-work assessment. The Appeal Commission set up at the Public Health Directorate, acknowledging the progress of the medical recovery program throughout this period, as well as the employee's ability of walking without a stick, decided on the fit-for-work assessment without restrictions, the employee actually willing to resume work.

Conclusions Physio-kinesis-therapy performed immediately and at 3 months post-surgery for the left trochanteric-diaphysis fracture allowed acceleration of public officer's healing and recovery. Recommendations from the rehabilitation, physical medicine and balneology physician regarding the necessity of walking to and at the workplace supported the employee's objection to the initial, restrictive work ability assessment only at the institution headquarters, and determined the commission's option regarding the appeal of the fitness for work, early professional reinsertion, in spite of possible injury risks. This decision, which is final and binding for the employer represented by a public institution with inspection and control role, constitutes a novelty decision and also a precedent for subsequent cases, is an example of the importance of priority application of the principles of medical recovery and reinsertion in the workplace to the detriment of the restrictive nature of legislation on work ability.

Key-words: physical medicine, medical recovery, work ability, legislation, fracture.

A BIOMEDICAL SYSTEM FOR ON-LINE MEASUREMENTS OF GAIT PARAMETER



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Abstract

Introduction: Healthcare cost continues to increase globally partly due to the surge in the occurrence of falls among the human being. The rehabilitation monitoring is a method to access and identify human body events and the measurements of dynamic and motion parameters involving the lower part of the body. This significant method is widely used in rehabilitation, sports and health diagnostic towards improving the quality of life. This research focuses on the development of a portable shoe integrated with wireless sensors and microelectronic based system.

Materials and Methods: The important gait parameter that influences the risk of falling among the human is foot clearance. The foot ground reaction forces produced by human body is very important in gait analysis. It is the natural parameter of the foot during the swing phase of the gait cycle that represents the distance of shoe sole above the ground. A recent study involving the analysis of the tripping and falling risks among the elderly and individuals during walking, showed that the motion of the foot during mid-swing phase is the most critical issue that can initiate the possibility of trip-related decline. The trip or fall is an event which may lead someone to collapse accidentally due to unstable position. It is a very dangerous incident among the elderly as it may cause critical injury and death. This important stage of foot movement is referred to as minimum foot clearance (MFC). Studies shows the MFC is below 5 cm while the foot trajectory during gait may go up to 17 cm. The selections of sensors and hardware are depending on the requirement of the foot clearance measurement. The sensors that are used in this research are ultrasonic sensor and IMU for determination of the MFC as well as the orientation of foot position respectively. The hardware design consists of Arduino microcontroller, 2.4 GHz IEEE 802.15 transceiver and power supply unit. Ultrasonic detectors are devices that are utilized for distance measurement which operates almost similar to how the radar is working where the distance is deduced from the total time of flight of the signal waves and the signal speed. An inertial measurement unit (IMU) is a device that contains accelerometer and gyroscope used to measure angular rate and acceleration data.

Results: The graphical human movement pattern of subjects during walking is shown in figure 1. The graph shows the several cycle of gait pattern including the gait phase such as MFC, toe off and landing phase. The measurements still due to the offset start reading point and the angle of the feet during walking. The ultrasonic system gives the direct distance reading instead of the foot clearance reading. The display of the human movement pattern of subject during walking shows the applicability of the system.

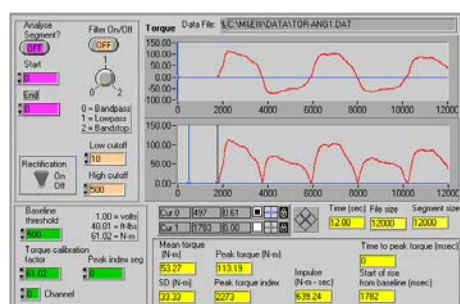


Figure 1 Human movement graph pattern.

Conclusions: This system has high potential to be marketed especially for rehabilitation centers, sports centers, health centers, hospitals, research organizations and the elderly. The medical specialist are also able to monitor the elderly gait, weakness identification and injury prevention for their patients.

IS MEDICAL THERAPY ENOUGH IN ANKILOSING SPONDYLITIS?

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Abstract

Introduction: Ankylosing spondylitis is a chronic inflammatory disease that can lead to severe damage of the spine with functional impairment, disability and poor quality of life. Medical therapy of ankylosing spondylitis has improved dramatically with the introduction of biologic drugs, but does it mean this is enough? Or do we still need other non-pharmacologic therapies?

Materials and methods: We present the case of a 56 years old male patient, who first came to our clinic more than 10 years ago, complaining of inflammatory back pain associated with morning stiffness and bilateral talalgia. Following the clinical exam, lab tests and other para-clinical investigations, he was then diagnosed with Axial Ankylosing Spondylitis HLA B27 negative. He was treated with different NSAIDs in maximal doses for about 2 years, with no answer on BASDAI scale. Therefore, biological therapy was being considered. From the moment of diagnosis, the patient was also referred to a rehabilitation doctor, in order to start physical therapy, but he chose not to go. He was also explained the importance of mobility exercises on a daily basis, but again, with no success.

Results: The patient received treatment with Infliximab 400mg every 6 weeks for the next 6 years, along with occasional NSAID. After the proper initialization of Infliximab, he received 400mg every 8 weeks as stated in the protocol, but the symptoms were not controlled, so we had to prescribe the therapy every 6 weeks. After 6 years he became non-responsive at Infliximab so we had to switch to Golimumab 50mg/month, treatment that he still receives in the present. We were able to achieve control over the activity of the disease with the maximal pharmacological therapy (BASDAI= 7 at the beginning, BASDAI=1,6 now) but the lack of physical therapy could easily be observed. Thus, the mobility indices are now worse than at the moment of diagnosis (for example the expansion of the thoracic cage is almost 0 now) and the patient has the typical “hunchback” posture of advanced ankylosing spondylitis.

Conclusions: This case demonstrates the important role of exercise therapy by using a negative example. Even if the disease activity is finally controlled with the most potent drugs-anti TNF alpha therapy, the disease progression is getting worse as the time passes and the patient still does not follow the recommendations concerning physical therapy. More important, various exercises and physical therapy programs have been evaluated in clinical studies and had shown that they can improve symptoms, mobility, posture, function and quality of life. In conclusion, exercise therapy should remain a mainstay of ankylosing spondylitis treatment complementing medical therapy.

CLINICAL AND REHABILITATION FEATURES OF A PATIENT WITH MULTIPLE VASCULAR DISORDERS: CORONARY, CEREBRAL AND ARTERIAL LOWER LIMBS – WITH MIDDLE THIRD RIGHT LEG AMPUTATION AND LEFT I MTT, WITH 6 CORONARY STENTS, CHRONIC ATRIAL FIBRILLATION AND CONGESTIVE HEART FAILURE



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Abstract

Introduction: Modern life is one of excesses, and diabetes is fairly common in the population. The weight of the consequences of diabetes varies depending on each patient, and can be concretized as arteriopathy, neuropathy, nephropathy, followed by their clinical consequences. For all these reasons, diabetes is a major public health problem.

Material and method: With the approval of the Bioethics Commission of the "Bagdasar-Arseni" Emergency Clinical Hospital (TEHBA) Bucharest (number 9181 dated April 11, 2018), we will present the case of a diabetic patient admitted to the TEHBA Clinic for Neuromuscular Recovery with extensive arterial disease. It is about the major obliterative arteriopathy affecting predominantly in the cerebral, coronary, renal, and lower limb arteries; manifested by central nervous and myocardial ischemia, chronic kidney disease, and extreme lower limb ischemia (leading to amputation of the middle third of the right leg and left forefoot).

Results: The peculiarities of the case are due to the problems of hierarchy of therapeutic objectives, given the increased risk of severe (potentially fatal) complications that may occur during the neuromuscular recovery process of a very fragile patient.

Conclusions: Diabetes mellitus is an extremely complex disease, both at the individual level (and for its family) as well as in the society (in connection with the treatment of disease and strategies to improve the quality of life of diabetic patients). The main message, in these conditions, is the huge importance of prevention (primary/secondary, even tertiary) in relation to diabetes.

EVALUATION AND OCCUPATIONAL THERAPY APPROACH IN CHILDREN WITH UPPER LIMB DEFICITS



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Abstract

Introduction:

Pediatric occupational therapy (OT) basis is understanding how a child's motor performance develops, and how it is related to his/ her cognitive development. In National Teaching Centre for Children Neurorehabilitation “Dr. N. Robanescu”, OT focuses on minimizing injuries/ disease effects and on a child's ability to function. Our target is to help every patient to reach his/ her full potential.

Material and methods:

Our specially trained OT therapists work with children who face different upper limb(s) impairments, due to developmental delays, neuromuscular conditions, sports injuries, and many other problems that affect a child's ability to complete daily tasks.

Besides positive approaches, our therapists use cutting-edge evaluation tools and methods to improve the child's motor skills, coordination, strength, and endurance.

Results:

In this work, there have been analyzed the most significant/ used evaluation scales and models for treatment of upper limb disabilities in children.

Conclusions:

Physicians and physical therapists work with occupational ones and/or other specialists to create a customized program which addresses each child's unique needs, in order to increase range of motion, strength and flexibility, thus gaining specific skills (e.g. bathing, dressing and eating). This can be done for both patients and as part of an outpatient program.

THE EFFECT OF LOCAL THERMONEUTRAL MUD AND PEAT APPLICATION ON THE SKIN HYDRATION MEASURED IN THE FOREARMS REGION WITH THE CORNEOMETER

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Abstract

Introduction: Mud and peat differ from each other in their chemical composition. The use of warm peloids as the treatment of different skin diseases has been studied previously. The moisturizing effect of mud and peat is mainly related to humic substances. The aim of the current study was to analyze the effect of thermoneutral mud and peat applications on the skin hydration (SH).

Materials and methods: An experimental study was performed with 50 persons in two groups. The SH measurement is based on capacitive method, and Multi Skin Test Center MC-1000 was used. Thermo-neutral natural sea mud and peat were applied on the left volar arm for 30 minutes on 10 following days and the SH level was measured before and after the last peloid application. The control data were measured on the right hand. Also, the content of humic substances was measured in both peloids. There was 2% of humic substances in mud dry matter, and 55% in peat dry matter.

Results: There were subjects in both groups whose forearm SH increased or decreased after the local peloid application. There was positive dynamics in SH level in 11 subjects ($p < 0.05$) in the mud group and in 7 subjects ($p < 0.05$) in the peat group. The positive dynamics in SH was 9.5% higher in the peat group. The negative dynamics in SH level was in 15 subjects ($p < 0.05$) in the mud group and in 17 subjects ($p < 0.05$) in the peat group. The difference with control hand was the same in both groups.

Conclusion: Mud and peat have very different content of humic substances but the differences in SH changes between the groups were not so big. Peat contains more humic substances and, therefore, the subjects in the peat group revealed higher positive dynamics in SH level.

MANAGEMENT OF EXTRA-ARTICULAR MANIFESTATIONS IN SPONDYLOARTHRITIS

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Abstract

INTRODUCTION: Spondyloarthritis (SpA) defines a heterogeneous group of diseases sharing certain etiopathogenic factors, clinical features and therapeutical options, therefore being closely related disorders it is difficult to *differentiate them*. The most typical and frequent clinical manifestations are the inflammation of the axial skeleton, *asymmetric* oligoarthritis, dactylitis and enthesitis. The condition may also cause inflammation in the gastrointestinal tract, *urogenital tract*, eyes, skin, neurologic and cardiovascular systems. **MATERIALS AND METHODS:** A systematic search of the published literature related to SpA was conducted using the Medscape database from the past five years. To identify the articles, the search procedure followed key words like "spondyloarthritis", "extra-articular manifestations", "tumor necrosis factor (TNF) inhibitors" and "spondyloarthritis treatment".

A total of 2680 titles were identified by the bibliographic database. The title, abstract or full article was reviewed for relevance; any article not related to extra-articular manifestations was excluded.

RESULTS: The published data has revealed that over the past years, *immune-mediated rheumatic diseases* have acquired spectacular progress in all fields - starting from the genetic and molecular mechanisms that stand at the pathogenesis basis of autoimmunity until applying this knowledge into developing new therapy. The progress is most significant in the spondyloarthritis group.

CONCLUSIONS: Looking beyond these therapeutical strategies, for example the "treat-to-target" in SpA, it is evaluated if these aggressive therapies will prevent the occurrence of the extra-articular manifestations and will change the natural history of the disease. New clinical studies with careful design are required to cover the whole spectrum of the extra-articular manifestations of SpA in order to confirm these results.

REHABILITATION IN HAEMOPHILIA

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Abstract

Introduction The role of physiotherapy in haemophilia is still unknown for many health professionals. In this disease, where the protagonist has always been the hematologist, physiotherapy also plays a fundamental role. Of all the changes caused by this disease, musculoskeletal disorders are the most frequent, serious and disabling ones that continue to significantly impede the normal daily life of these patients as well as their social activity or school activities [4, 5, 6].

Material and method Proper rehabilitation treatment can provide the patient with more independence and functional capacity and, as a result, can improve the quality of life. Hemophilia is a hemorrhagic, hereditary, monogenic, recessive and sex-related disease. The cause is the deficiency of factor VII blood coagulation or factor IX. This deficiency is the cause of hemorrhages that can be cerebral, more serious and / or musculoskeletal, with larger sequelae. Already Biggs and McFarlane published in 1962 a series of papers in which they proposed a new treatment approach, underlining the value of the orthopedic field. Hemophilia, like all diseases, receives better multidisciplinary treatment, and the recovery physician is essential in this team, always accompanied by appropriate hematological treatment. The most common musculoskeletal lesions in haemophiliacs are haemarthrosis, synovitis, haemophilic arthropathy and, as a consequence, all functional disorders and the disability it involves. Hemophilia arthropathy, which is one of the most frequent and severe complications [5], is a degenerative joint process secondary to hemorrhage and has an anatomopathological entity of its own. Undoubtedly, it is due to the production of repetitive intra-articular haemorrhages, but other mechanisms that lead to lesions of joint structures, bone disorders, cartilage disorganization and include age, muscle hematoma, sedentary life, lack of muscle strength, inadequate efforts, repetitive movements, obesity, instability [5, 6, 7], the joints of the knee, ankle and elbow being the most affected. Hemarthrosis is also common in the elbow, ankles and knees. Its etiology can be traumatic or spontaneous, and severity is usually linked to the intensity of trauma. This intra-articular blood deposit causes a synovial hypertrophy, which usually leads to a new haemorrhage and most of the time a haemophilic synovitis [8]. Another common accident is muscle damage. Bleeding continues until the intramuscular pressure is equal to the intravascular pressure of injured vessels. If the amount of blood exceeds the capacity of phagocytes to re-absorb it, it is encapsulated and forms a cyst. It can evolve and form a pseudo-tumor that can invade and damage neighboring tissues or may evolve and form an abscess. The objectives of physiotherapy in haemophiliac patients are broad. Relief of pain and sensory disorders, resorption of bleeding and inflammatory processes, ensure adequate physical fitness, improve quality of life, and prevent and treat joint and muscle joint and lesions. The techniques used are also diverse and range from physical-sport therapy for patients without injuries, all techniques of kinetotherapy, thermotherapy, electrotherapy, magnetic therapy, laser therapy, hydrotherapy and ultrasound.

Results In patients with haemophilia, we find lower values of the isometric, isokinetic contraction, especially in the lower extremities of the healthy population, and in the case of the healthy limb if they suffer unilateral haemarthrosis [2, 3, 4, 5, 12]. In patients with haemophilia, the lack of maximum force and the presence of fluctuations (inability to produce constant force) during physical activities suggest an increased risk of bleeding [9, 10], which will determine the severity of arthropathy.

Given the literature, we can conclude that increasing muscle strength by various methods is an effective and safe technique for the haemophiliac patient. The success of our intervention will therefore be the ideal choice of one or the other method based on objective and safe data.

Ownoception is also altered, in addition to muscular atrophy, as a result of immobilization after bleeding [4]. The basis for rehabilitation depends on the correct relationship between the musculoskeletal system and the nervous system, because valorisation and involvement of proprioception should not be neglected, which plays an important role in improving joint stability, especially when most haemorrhages are in the lower limbs [1] .

Early treatment and early preventative treatment have shown that children with moderate and severe haemophilia are comparable to healthy elderly in terms of muscle strength, motor control and daily life development [12].

Conclusions

Hemophilia is not a common pathology in rehabilitation services, but we must not forget that it exists. Like many other conditions, it goes unnoticed in the broad spectrum of affections we usually treat, but that does not mean it should be left untreated. Recovery physicians have a professional and ethical obligation to continue training for life.

Investigate what we do not know, study what has been forgotten, and never forget that there is always treatment, even if it is conservative treatment.

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LATERAL SCLEROSIS AMYOTROPHIC SYNDROME IN A TETRAPARESIS PATIENT WITH CERVICAL SPINAL STENOSIS

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Abstract

Introduction: Amyotrophic lateral sclerosis syndrome (SLA) is a rare disease which is difficult to diagnose when it is secondary to other pathologies.

Material and method: We present the case of a 76-year-old patient whose symptomatology onset in August 2017 with minor motor deficit that progressed from proximal to distal. He was in hospital, neurological department, on September 2017 with tetra-paresis, the patient being immobilized in bed, unable to maintain a sitting position. In the neurological evaluation, the patient shows the atrophy of the bilateral interosseous muscles, paralysis of the upper and lower limbs, decrease of muscular strength 3/5 proximal muscles and 2/5 distal limb muscles and limitation of active movements. Deep tendon reflexes (myotatic reflex) are absent, Babinski reflex is present bilaterally, present fasciculation, vermicular movements of the tongue and minor deglutition disorders. Cranial and cervical Computer Tomography (CT) evaluations do not highlight brain changes, only cervical spinal stenosis at the C6-C7 level. Thoracic-abdominal CT exclude replacement processes. Cervical Magnetic Resonance Imagery confirm cervical vertebral canal stenosis C6-C7. Functional electromyography exploration invalidates the diagnosis of SLA. The patient was transferred to the neurological recovery department where he received neurotrophic drug therapy and adequate physical-kinetic treatment with re-education of sitting position and force pretension techniques for improving swallowing.

Results: Based on the clinical and imagistic data's, we consider the diagnosis as SLA syndrome in a progressively installed tetra-paresis patient and cervical spinal stenosis, non-responsive to drug and physical therapy. He is directed to the neurosurgery service where he is operated in January 2018. The patient returns to the neurological recovery section where at re-evaluation he has an improvement of functionality after the application of the kinetic programs with the standing and walking with auxiliary devices.

Conclusions: Although SLA syndrome is rare, it can be found in cervical compression forms with the progressive motor deficit and muscle atrophy. Timely interventions with decompression at the cervical stenosis level allows the recovery program to significantly improve the neuromotor deficit with re-education of missed motion schemes.

THE ROLE OF PERIFERIC MAGNETIC STIMULATION IN RECOVERY OF UPPER LIMB SPASTICITY IN POST-STROKE PATIENTS

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Abstract

Introduction: High degree of spasticity causes an important impairment in the function of the individual member, as well as a major impediment to stroke recovery. Over the years, various therapies have been tried to help reduce spasticity after stroke. In this paper, our goal is to evaluate the efficacy of repetitive, peripheral magnetic stimulation (pRMS) on the spasticity of the upper limb in stroke patients.

Material and methods: We observed a group of 90 recent stroke patients (up to 3 months) that we followed during the admission (2 weeks) and 3 months and were divided into two equal lots: the study group - 45 patients and control group - 45 patients. All patients were between 50 and 70 years of age. They all followed specific and appropriate drug treatment. Patients in the study group next to drug therapy followed 30 minutes of physical therapy treatment and pRMS. Patients in the control group followed medical treatment and physical treatment (galvanization, laser, interferential currents) and kinetotherapy. The assessment was made initially at admission, 2 weeks later (at discharge) and 3 months after rehabilitation treatment, following the degree of spasticity according to the modified Ashworth scale and indirectly using the ADL scale.

Results: The control group presented a minimal reduction of spasticity by 15% and the studio group managed to significantly improve their status starting from a spasticity with a score on the modified Ashwoth scale of 3.8 and reaching 2.8. The score on the ADL scale showed significant improvements in the studio group, the control group had a steady evolution in the first month, only the last assessment showed an improvement of 20% on average, compared to 35% as the study group .

Conclusions: PRMS therapy demonstrates its utility in combating spasticity in the upper limb in post-stroke patients. Combining pRMS with specific kinetic programs also improves the functional status proven on ADL specific scales.

STATISTIC ANALYSIS OF THE PATHOLOGY IN THE PATIENTS HOSPITALISED DURING 2017 IN THE BALNEAR AND REHABILITATION SANATORIUM OF TECHIRGHIOI

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Abstract

Introduction: Yearly, S.B.R.T. helps the patients by providing a range of complex means of medical rehabilitation. It is owed to the modern treatment base, to the theoretical and practical training of the nurses and last, but not least, to the understanding from the personnel of the necessities of the patients with neuro-motor disabilities.

Materials and Methods: We have retrospectively evaluated the patients' observation papers, who have been hospitalized between 9th January 2017 and 16th December 2017. Demographic data and information about the diseases that had determined the hospitalization were registered. The Sanatorium is divided in 4 parts as it follows: 2 parts of Rehabilitation units for adults I and II, each with 170, and 175 beds, adults' Sanatorium department with 410 beds and the children's section with 180 places.

Results: During 2017, the number of patients was 12981, assigned this way: 7.47% children and 92.52% adults. In Children's Neuro-psychomotor Rehabilitation section, patients aging between 3 and 16 years old were hospitalized. The majority of them, presented central neurologic affections, congenital or gained ones (56.59%) and growth disorders (17.42%), most of them (42.68%), aged between 10 and 14 years, followed by the ones between 5 and 9 years (35.15%). In this section, during the year, 7474 consultations, 644 psychological counseling sessions and 881 speech counseling sessions. The age of the 12011 patients hospitalized in the adults section of S.B.R.T. was between 16 and 90 years old. 61.4% represented women and 38.6% men, 81.16% living in cities and 18.83% living in countryside. The month that registered the highest number of hospitalized patients, was July (1553), and the months with the lowest number of patients hospitalized, were January (100) and December (460). The big difference between the 2 months of winter, was because of the weather. The most frequent diagnosis was peripheral osteoarthritis (47.74%), followed by degenerative vertebral affections (35.45%), rheumatic inflammatory diseases recording only a percentage of 2.67%, and the post-trauma lesions 5.6%. 5.69% of the patients had neurologic affections. Most of them presented secondary motor disorders to a stroke (31.43%) or to a spine trauma (18.4%), presenting different grades of locomotor disability, 73% needing means to help them move. 94.91% were ensured in the public health service, the rest of 5.08% being un-ensured. In the group of the ensured patients, 89.89% were sent by the GP and 5.2% were sent by a specialist. The patients were from the 42 districts of the country, the most of them from Constanța (36.86%) and Bucharest (18.04%), from Bihor and Harghita being 6 and 9 patients. 62 patients from other countries were hospitalized, their number representing 0.5% from the total number of patients.

Conclusions: S.B.R.T is a medical unit, where approximately 12000 patients, both children and adults, are hospitalized every year, the cause being varied and complex. Adults have degenerative rheumatic pathology, but there exists an important number of patients, with central neurologic diseases. On the other side, most of children present congenital or secondary neurologic affection.



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