

Correlations between radiological score with clinical and laboratory parameters in rheumatoid arthritis

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ABSTRACT

Staging in rheumatoid arthritis (RA) and evaluating the effectiveness of drug treatment involves the determination of radiological scores (for narrowing and erosions), this being the most specific changes and most commonly found in RA. **Materials and methods:** Our study was conducted over a period of 12 months in Medical Rehabilitation Clinic of „Sf. Spiridon” Iasi Hospital, on a group of 40 women patients with RA in various stages of evolution. X-ray examination was done on hands and feet at the beginning and the end of the study period. There were computed radiographic Sharp scores for narrowing and erosions and the total score. Erosions were examined for 16 joints in each hand. For narrowing five joints were evaluated. For accuracy, radiological examination was done on mammography film. **Results:** After calculating Sharp scores - Van der Heide version - I compared them with the levels of clinical (HAQ, NAT, NAD, DAS28), bone densitometry and laboratory (ESR, CRP, rheumatoid factor, IL-1 β) parameters. **Conclusions:** The values of radiological scores for narrowing and erosions are directly correlate with DAS28, HAQ, rheumatoid factors levels and IgG values, and indirectly correlated with IL-1 β levels.

Key words: radiological scores, RA, narrowing, erosions.

Introduction

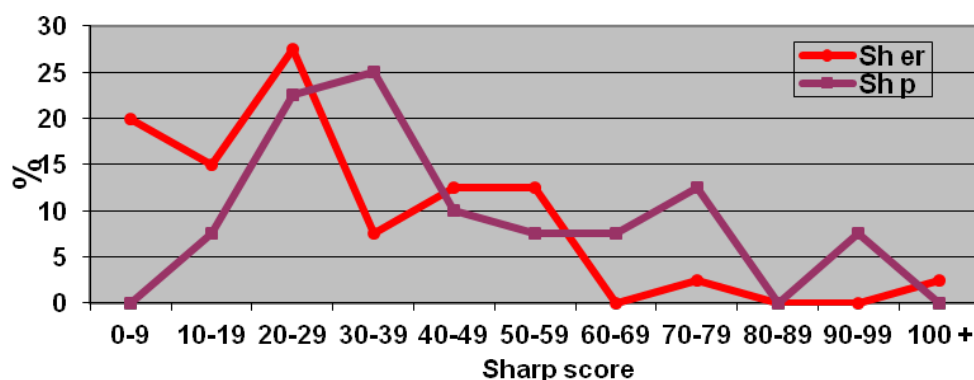
The positive diagnosis of RA is – principally - a clinical one, but is sustained by laboratory (hematological, biochemical, immunological) and radiological successive examinations data that shows the disease evolutive stage and its response on drugs therapy.

Material and method

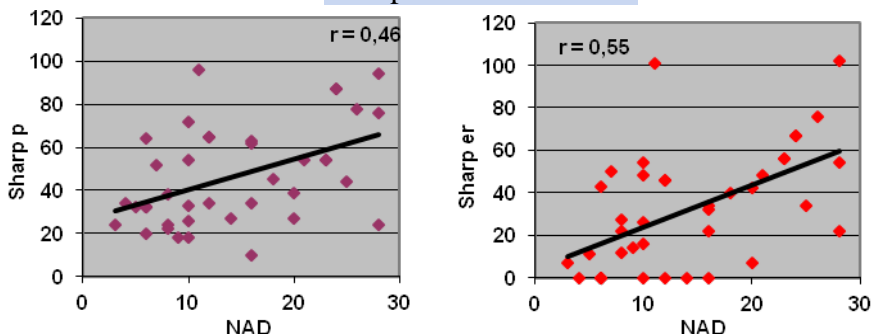
Starting from the above data, using a group of 40 women patients with RA in different stages of evolution and different types of

treatments (excepting the biological therapy), the study tried to determine the dynamic of Sharp scores evolution (for narrowing and erosions) and the total score in the same time. The patients were selected from Medical Rehabilitation Clinic of „Sf. Spiridon” Iasi Hospital ones, and the overall period of the study (approved by Ethical Commission of UMF „Gr. T. Popa” Iasi) was 1 year.

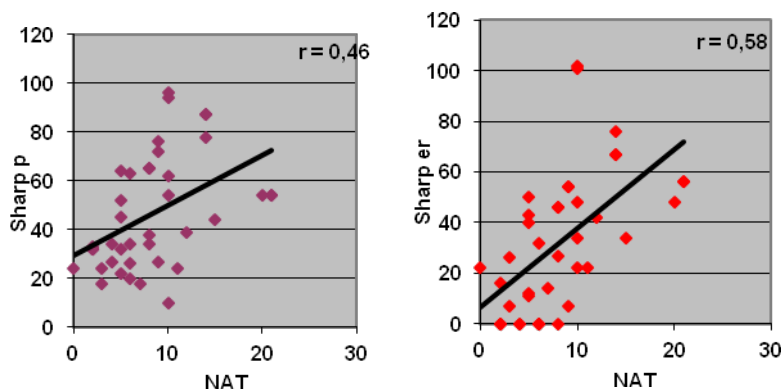
Results and discussions



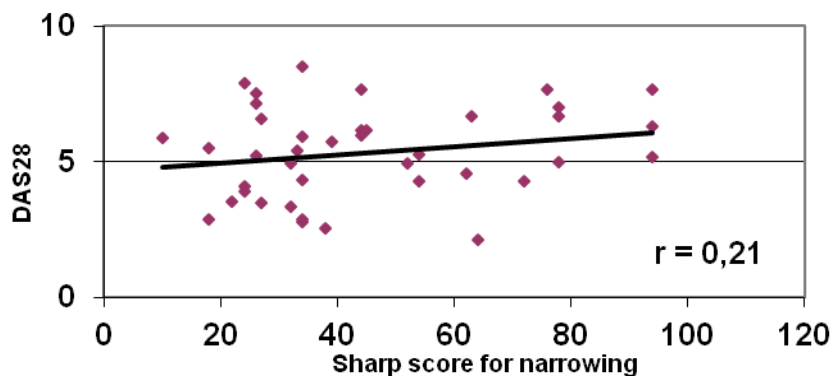
1. Sharp score distribution



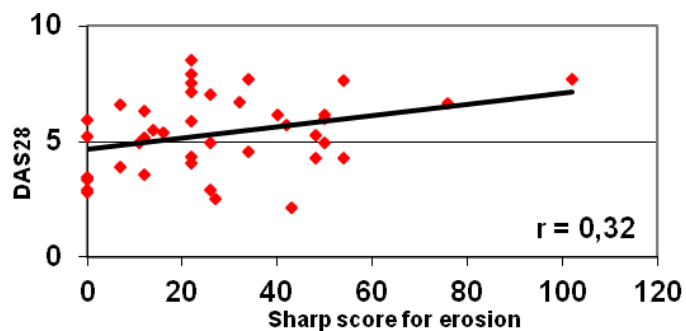
2. Sharp score correlation for narrowing and erosion with the number of painful joints



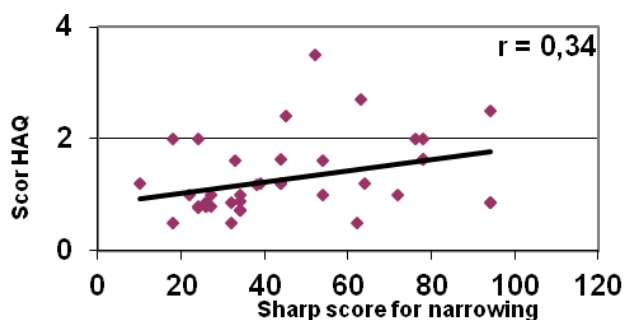
3. Sharp score for narrowing and erosion correlated with the number of swollen joints



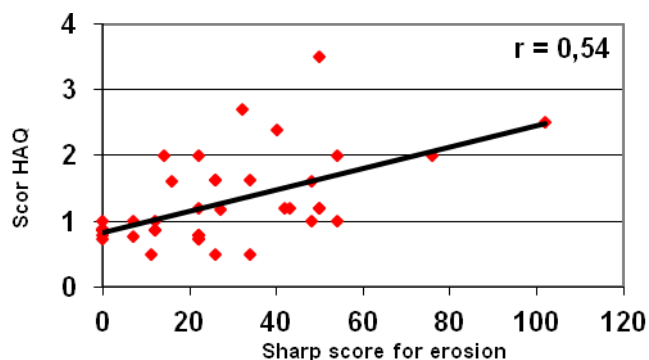
4. Correlation between DAS28 score and Sharp score for narrowing



5. Correlation between DAS28 score and Sharp score for erosion



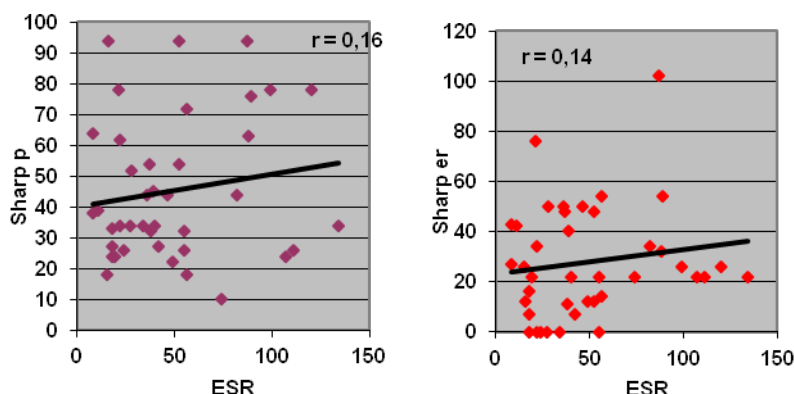
6. Correlation between HAQ score and Sharp score for narrowing



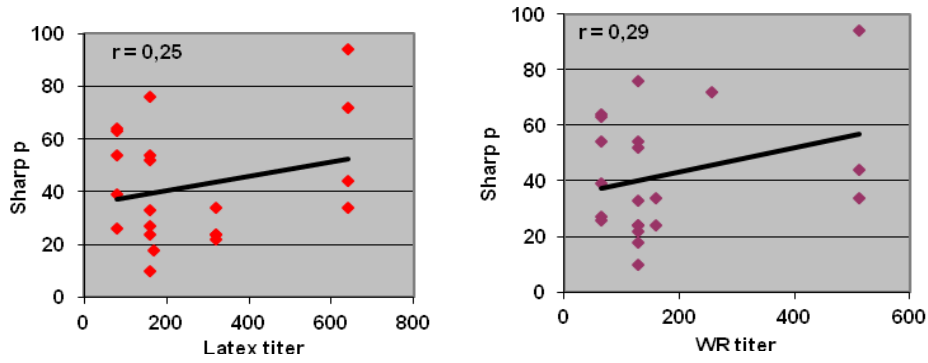
7. Correlation between HAQ score and Sharp score for erosion

The number of painful joints, swollen respectively, is statistically dependent by Sharp scores for narrowing and erosion levels. DAS28 score correlates in a direct manner with both Sharp score for narrowing ($r = 0.2$) and for erosion ($r = 0.3$) - but the correlations are weak. Sharp erosion score is directly proportional with HAQ score ($r = 0.54$). Sharp scores for narrowing and erosions correlates in a directly proportional manner but statistically insignificant ($r = 0.14$) with

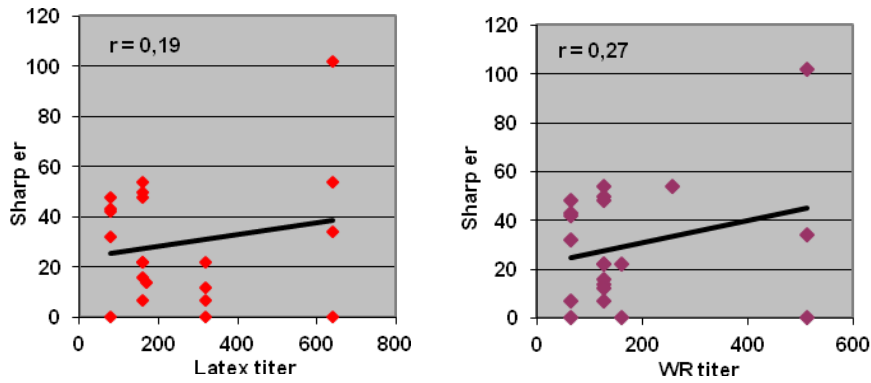
ESR levels. Latex rheumatoid factors levels ($r = 0.25$) and Waaler Rose ($r = 0.29$) correlates directly but not statistically significant with radiological scores. IL-1 β levels are inversely proportional to narrowing Sharp score ($r = -0.33$) and for erosion ($r = -0.27$). Bone densitometry parameters level, evaluated using DEXA exam (T-score) are significantly indirectly correlate with Sharp scores for narrowing and erosion.



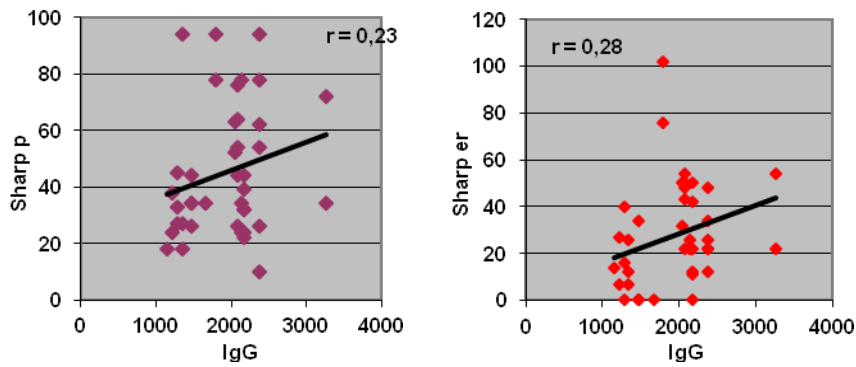
8. Correlation between ESR levels and Sharp score for narrowing and erosion



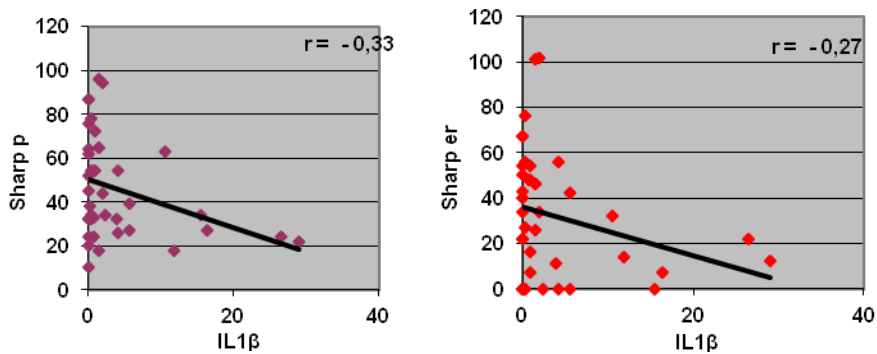
9. Correlation between Sharp scores for narrowing and rheumatoid factors titer levels



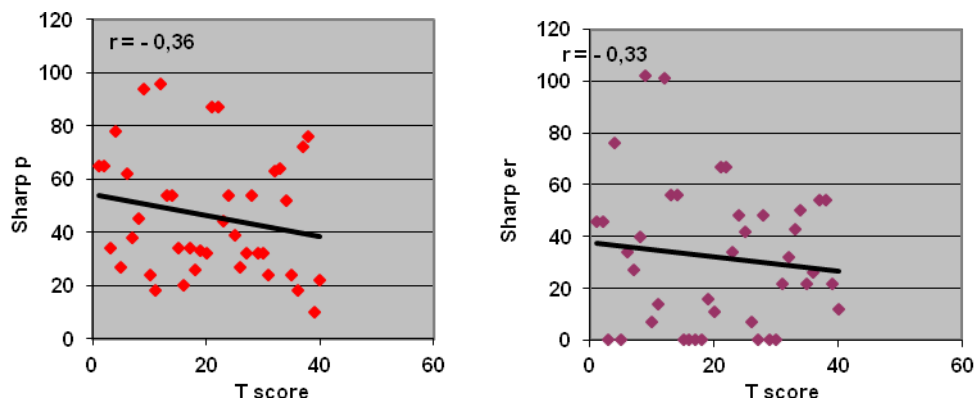
10. Correlation between Sharp scores for erosion and rheumatoid factors titer levels



11. Correlation between Sharp scores for narrowing and erosion and IgG seric levels



12. Correlation between IL1 β levels and Sharp scores for narrowing and erosion



13. Correlation between Sharp score for narrowing and T score

Conclusions

The study determined for the first time in Romania the IL1 β levels.

Radiological scores levels correlate directly proportional to the duration of the disease and clinical parameters, with scores DAS, HAQ and NAD, NAT respectively, laboratory parameters (rheumatoid factors, IgG, ESR, CRP); correlates inversely proportional with levels of immunological parameters (IL-1 β) and bone densitometry (T-score) - which is in full accordance with the data in the literature.

Bibliography

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