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AB1114 CALPROTECTIN IN SERUM AND SYNOVIAL FLUID AS A BIOMARKER IN ACUTE ARTHRITIS

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Background: There are increasingly data about the usefulness of calprotectin levels in chronic inflammatory arthritis and its relationship with prognostic factors. However, few data are available on its role in the diagnosis of acute arthritis.

Objectives: To evaluate the possible usefulness of testing plasma and synovial fluid (SF) calprotectin levels as a predictor of the final diagnosis behind an acute mono or oligoarthritis.

Methods: Longitudinal observational study. We included non-consecutive patients referred to the rheumatology emergency department with suspected mono or acute oligoarthritis for a period of 23 months. Patients with a previous diagnosis of inflammatory, infectious or neoplastic disease were excluded. All of them underwent diagnostic arthrocentesis and blood extraction simultaneously. The SF was evaluated under optical microscopy immediately for the study of microcrystals. Samples of SF were also routinely sent to microbiological culture, and calprotectin levels (SFC) and cell count were determined. In blood, the calprotectin level (SC), CRP and ESR were determined. The calprotectin level in plasma was determined by an automated fluoroenzyme-immunoassay technique on an ImmunoCAP250 analyzer (Thermo Fisher). All patients were followed until diagnostic confirmation. The statistical analysis was performed with the SPSS 22.0 program.

Results: 41 patients were collected, 28 men (68.3%) and 13 women (31.7%) with a mean age of 56.2 years (SD 17.6). The patients presented an average of 6.5 days of symptoms duration (SD 7), manifested as monoarthritis in 80.5% of the cases, with the knee being the most frequently affected joint (92.5%).

In all patients, SF culture was negative. The most frequent diagnosis was microcrystalline arthritis in 21 patients (13 gout and 8 pseudogout), followed by the forms of onset of different chronic inflammatory arthropathies (9). Another 8 patients presented a mechanical joint effusion, in 1 patient the final diagnosis was not collected and there were 2 patients who presented other diagnoses (viral oligoarthritis, pigmented villonodular synovitis).

Calprotectin values were higher in SF than in serum (mean 73,058 vs 824.75 µg/g). A high positive correlation was found between the SC and the CRP ($p < 0.05$, $r = 0.7$) whereas the correlation with the number of leukocytes in SF ($p < 0.05$, $r = 0.47$) and with the ESR ($p < 0.05$, $r = 0.5$) was moderate. The SFC was correlated with the CRP ($p < 0.05$, $r = 0.45$) and with the cell count in SF ($p < 0.05$, $r = 0.6$), but not with the ESR. Regarding the different diagnoses, SC was numerically higher in microcrystalline arthritis (1157 µg/g) compared to non-microcrystalline arthritis (862 µg/g), although these differences were not significant due to the low number of patients in each group.

Conclusion: Our preliminary results suggest that the analysis of SC could complement the information provided by a conventional analysis in the differential diagnosis of acute arthritis in situations in which an arthrocentesis is not possible. Studies with a greater number of patients and that include patients with septic arthritis are necessary.

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AB1115 OBESITY AND FLAT VERTEBRAE

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Background: Spine is a mechanical structure, in a young and healthy individual, under a radiological focus, disposes their vertebral bodies in harmony with their stature, and progressively increasing in magnitude from the cervical to the lumbar spine, in a range of vertical growth that it can exceed the horizontal (1).

It is postulated that the important obesity in the early stages of life, could modify the vertebral parameters by skeletal overloads, but the problem is that the current vertebral indexes do not measure a relation of the person height with his vertebra (2).

Objectives: Thus, to check whether the childhood obesity could modify the vertebral parameters, or it is accepted that it entails a loss of equivalent stature, and in this case would be necessary a study comparative of average height, or whether the harmony of the individual is accepted, it would be necessary to create an index that combine these variables to objectify if its value is a constant, and thus, eliminate the ambiguity of the observer.

Figure 1. With a chest lateral plate, not rotated, and in the eighth dorsal vertebra (VD8), by proximity to the Scheuermann kyphosis, we calculate his length (LVD8) and his height (HVD8), measured in mm. Thus, from the horizontal one of his pedicle, taken at that height and parallel to the vertebral plate with superior disc contact, LVD8 is 35.50mm. Drawing a line perpendicular to the previous one (90.1°), and measured from the most sclerous area of the vertebral plate with disc contact superior to inferior, passing through the midpoint of its length (17.74mm), we obtain a HVD8 of 20.69mm.

Methods: We selected a population of obese ($BMI \geq 35$), both sex, between 20 and 55 years old, in bariatric surgery protocol, with a significant obesity in their development. Was excluded any cause that could produce vertebral flattening. As a control group, was included any patient that went to outpatient visit of rheumatology, and which met the inclusion and exclusion criteria above, except obesity.

As variables, sex, age, body mass index (BMI), and with a chest lateral plate, not rotated, and in the eighth dorsal vertebra, we calculate his length (LVD8) and his height (HVD8), measured in mm. Figure 1.

Finally, we applied a comparative study of average of height and vertebral index (VI) results: $VI = 10 \times LVD8 / (HVD8 \times stature)$

Results: 90 patients were analyzed. 20 patients in the study group (22.2%): 48.1% female, 48.6 years old, 38.2 BMI, and VI 11.6 Meters-1 And 70 patients in the control group (77.8%): 51.1% females 45.15 years old, 26.2 BMI, and VI 11.2 Meters-1

The comparative analysis of averages does not show any significant differences in the index or in the stature of these patients.

Conclusion: It is a small study, and according to height or the created index, it does not seem that obesity in development modifies the overall height or the vertebral parameters. In addition, the index gives a stable value regarding the sex of both populations in the eighth dorsal vertebra.

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