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Prognostic factors for chronic arthritis in children with acute joint swelling

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Introduction

Acute inflammatory arthritis is frequent clinical sign in children with variable outcomes. Often post infectious or viral arthritis progress to chronic joint disease

Objectives

Our aim is to determine prognostic factors that predict the course of chronic arthritis in children.

Methods

116 consecutive children with acute arthritis with symptoms duration < 6 weeks included in prospective study. A standardize rheumatologic evaluation was performed on newly referred patients. Possible diagnostic variables collected at the first visit: active joints count, symptoms duration, time of morning stiffness, erythrocyte sedimentation rate (ESR), C reactive protein (SRP), antinuclear antibodies (ANA), HLA B27, myeloid-related protein 8/14 (MRP8/14) and IL-6 . Arthritis outcome was defined at 1 and 2 years follow-up. We considered the clinical outcomes - chronic arthritis and inactive disease. Multiple linear regression with forward stepwise was used to determine the prognostic variables.

Results

109/116 patients completed follow –up period. Of all patients 36,7 % had clinically active (or chronic) arthritis after 1 year, and 30 % - after 2 year follow-up periods, and had been treated with appropriate therapy after establishing initial diagnose (JIA, arthritis related to infections and self-limited undifferentiated arthritis). The mean serum level of MRP8/14 at baseline measured in patients with arthritis related to infection was 11233,74 ng/ml, and 7836,05 ng/ml in JIA patients, compared with self-limiting arthritis – 4832,19 ng/ml (p<0,001). Predominantly very high MRP8/14 concentrations were measured in patients who developed chronic disease.

Logistic regression analysis showed that significant predictors of chronic disease were presence of morning stiffness (OR 8,7 [2,15-35,04]), arthritis in ≥ 5 joints(OR 6,3 [2-19,9]) and MRP8/14 concentration >5785 ng/ml (OR 4,4 [1,59-12,01]) at baseline.

Conclusion

The early presence of morning stiffness, polyarthritic joint involvement and high MRP8/14 concentration in a child with acute arthritis indicates the likelihood of chronic disease after 1 and 2 years follow-up.

Disclosure of interest

None declared.

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