New insights into the management of JIA

**POS0334**

**DRIVERS OF NON-ZERO PHYSICIAN GLOBAL SCORES DURING PERIODS OF INACTIVE DISEASE IN JUVENILE IDIOPATHIC ARTHRITIS**

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**Background:** The ACR provisional criteria for defining inactive disease (ID) in Juvenile Idiopathic Arthritis (JIA) requires that the physician's global assessment of disease activity (PhGA) is marked as 0 on the visual analog scale (VAS). However, some investigators have noticed the tendency of some clinicians to mark the PhGA>0 even on resolution of active disease. Due to the fact that the PhGA and the count of active joints are the two main physician-centered measures included in ID criteria, the analysis of their discordance may be of importance to address the issue.

**Objectives:** To investigate the frequency in which the physician provides a global assessment of disease activity (PhGA)>0 and an active joint count (AJC)>0 in children with juvenile idiopathic arthritis (JIA) and search for determinants of divergence between the two measures.

**Methods:** Data were extracted from a multinational cross-sectional dataset of 7265 patients who had JIA by ILAR criteria, were recruited between 2011 and 2016 and had both PhGA and AJC recorded by the caring paediatric rheumatologist at the study visit. Determinants of discordance between PhGA and AJC>0 were searched for by multivariable logistic regression and dominance analysis.

**Results:** The PhGA was scored >0 in 1211 (32.4%) of 3668 patients who had an AJC>0 even on resolution of active disease. Due to the fact that the PhGA and the count of active joints are the two main physician-centered measures included in ID criteria, the analysis of their discordance may be of importance to address the issue.

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**POS0333**

**CIRCULATING NON-CLASSICAL CD14 LOW/CD16+ MONOCYTES AND THEIR EXPRESSION OF ARGINASE-1 ARE ASSOCIATED WITH THE ACTIVITY OF AXIAL SPONDYLOARTHRITIS**

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**Background:** Human peripheral blood monocytes represent heterogeneous population and can be divided into three major populations, classical (CD14⁺CD16⁻), intermediate (CD14⁺CD16⁺) and non-classical (CD14⁻CD16⁺) monocytes. All three monocyte populations are thought to have different functional activity, including their pro- and anti-inflammatory activity. The ratio between monocyte populations could change in inflammatory conditions that it is thought to be important for the development of adequate immune responses. Axial spondyloarthritis (axSpA) being autoimmune diseases is currently classified as an autoinflammatory disease based on a strong inflammatory component. It is accepted that increased concentration of pro-inflammatory mediators can cause an impairment of myelopoiesis.

**Objectives:** The present study aimed to analyze the frequency of blood monocyte subpopulations and their expression of the suppressor molecule arginase-1 (Arg1) in patients with axSpA.

**Methods:** The study included 14 healthy donors and 19 axSpA patients aged 23 to 59 years, including 15 men and 4 women. Ankylosing Spondylitis Disease Activity Score (ASDAS) was used to assess disease activity and high activity was determined as ASDAS≥2.1. The disease duration at the time of the study was 12 years (median). Phenotypic analysis of blood monocytes was performed by flow cytometry based on CD14 and CD16 expression.

**Results:** The frequency of monocyte subpopulations in patients with low/moderate activity of axSpA did not differ from the donor group. Patients with high very high disease activity showed an increased relative number of non-classical CD14⁻CD16⁺ monocytes (vs donors p=0.007). All donor monocyte subpopulations expressed suppressor intracellular molecule Arg1 with higher expression in intermediate and non-classical monocytes. The expression of Arg1 in CD14⁺CD16⁺ monocytes was significantly reduced in patients with high activity (vs donors Me 41.5 vs 76.5%, p=0.01). Patients with the presence of peripheral articular manifestations of axSpA were characterized by a decreased Arg1 expression in non-classical monocytes compared with the donor group (p=0.02). However, patients without peripheral manifestations demonstrated a significant reduction of Arg1 expression in all monocyte subpopulations (p<0.05).

**Conclusion:** Shifting of monocyte subpopulation toward a higher number of non-classical monocytes with the decrease in the expression of the suppressor molecule Arg1 in the high activity of axSpA can play important role in terms of the possible involvement of monocytes in maintaining inflammation and its regulation in autoinflammatory disease.

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**Figure 1.** Multiple correspondence discriminant analysis for CD71, serum SIgA and activity index in SpA patient.

**Conclusion:** The findings reflect a possible relationship among the apical expression of CD71 in ileum with high levels of serum SIgA and activity, suggesting that retrotranscytosis mediated by this receptor might be a mechanism that mediate the intestine-joint axis in SpA.

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**Figure 1.** Domination analysis of relative importance of predictive factors in explaining the variance in PhGA.