Juvenile idiopathic arthritis – from macrophage to morbidity

Background
Juvenile idiopathic arthritis (JIA) is the most common pediatric rheumatic disease. The disease course and prognosis differ between different forms of JIA. With modern treatment options, such as TNF-α-inhibitors, short-term outcome of JIA has improved. Follow-up data from long-term studies are few and data on comorbidities are mostly lacking.
In addition, the pathogenesis in JIA is not fully understood. Monocyte polarization and antinuclear antibodies (ANA) have been suggested to be involved in the pathogenesis, but the significance of these processes in JIA is not well studied.

Aim
The aim of my PhD-project is to present the epidemiology of JIA in Skåne and to study
1) Outcome and co-morbidities
2) The monocyte polarization pattern in synovial fluid using flow cytometry
3) The influence of ANA in pathogenesis and prognosis of JIA

Preliminary results
I have retrospectively created a population-based JIA-cohort of 251 children diagnosed in Skåne 2002-2010 and recorded data annually on their disease status and treatment. The incidence rate is 12.8/100 000 children. Long-term effects of JIA, such as chronic uveitis and need for orthopedic surgery, are less common than published results. However, 60% of the follow-up years are still with active disease.

Results from the laboratory part of my PhD-projects suggest that in oligoarticular JIA, as opposed to other rheumatic disease, synovial monocytes display a mixed M1/M2-polarization pattern with decreased M2-bound capacities that may influence the local inflammatory pathogenesis.

Scientific value
This JIA-cohort provides many opportunities in studying different aspects of outcome with results applicable to patients with JIA today. The laboratory part of my PhD-project will add light to two aspects in the pathogenesis of JIA yet not well studied.

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