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Preface: Recent advances in autoimmune and auto-inflammatory diseases in childhood

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Paediatric Rheumatology has seen tremendous advances in the last decade. The advances in immunology and technology, coupled with legislative action in US and EU have led to more trials and evidence based new therapies for children with rheumatic diseases than any other paediatric sub-speciality. Importantly, this enormous progress continues to accelerate, fostered by major international collaborative efforts in clinical and translational research. Paediatric rheumatologists manage a cluster of chronic, autoimmune and/or auto-inflammatory conditions in children and young people. These range from being relatively uncommon to being extremely rare. The study of rare diseases has led to better understanding of pathophysiology and targeted treatments. These targeted treatments also find application in more common diseases (1).

Recently, there has been a significant step change in recognizing the great value of understanding in detail the genetic, molecular and associated mechanistic pathways of these conditions in the very young, in whom there has is markedly less accumulation of significant co-morbidities and organ damage. This has begun an enriching process of shared knowledge between paediatric and adult clinical research communities that demonstrates the opportunity for paediatric rheumatology to impact significantly on the care and understanding also of adult-focussed rheumatic disorders and novel pathways for targeted treatments.

In this issue, international experts from the across the field address key topics such as precision medicine for children with rheumatic diseases and newer auto-inflammatory diseases such as the interferopathies. The advances in

management of juvenile dermatomyositis, scleroderma, lupus, uveitis and periodic fever syndromes are also addressed.

There continue to be many challenges in advancing knowledge in this field. These include ensuring that appropriate clinical trials, using methodology and trial design appropriate for and including the insights and perspectives of children and young people care carried out in paediatric rheumatology. This is especially important with the advent of newer molecules that are relevant to major clinical bedside questions, and not just in meeting regulatory requirements.

As the specialty of paediatric rheumatology continues to grow and develop, equitable access to the very best care and new and effective treatments and therapies is critical across the world.

1. Ridker, P. M., et al. (2017). "Antiinflammatory Therapy with Canakinumab for Atherosclerotic Disease." N Engl J Med **377**(12): 1119-1131.