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Pediatric rheumatology—its own specialty

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"Pediatrics does not deal with miniature men and women, with reduced doses and the same class of diseases in smaller bodies, but … it has its own independent range and horizon and gives as much to general medicine as it receives from it" (Jacobi A and Robinson WJ [1909] New York: The Critic and Guide Company). This century-old statement by Abraham Jacobi, the founding father of pediatrics in the US, is especially relevant to the field of rheumatology. Many pediatric rheumatic diseases (PRDs) have distinctly different phenotypes from their adult counterparts. Recent genomic and proteomic studies also support the notion that PRDs are often different from adult rheumatic diseases (ARDs); the best-known example might be the genetic and genomic studies in juvenile idiopathic arthritis (JIA). Elucidation of the molecular and genetic differences between PRDs and ARDs is likely to keep rheumatology researchers occupied during the upcoming decades.

Disease measures specific to PRDs are, therefore, essential. Some such measures have been validated, including the JIA Classification Criteria, the American College of Rheumatology Pediatric 30 Criteria, the JIA Damage Index, and the Childhood Myositis Assessment Scale. Importantly, these measures consider developmental and growth issues in the assessment of the disease course in children; however, their use in clinical trials makes comparison to adult cohorts more challenging.

In addition to the need for pediatric-specific disease measures, different laboratory tests are also required for diagnosis of many PRDs. The only laboratory test that distinguishes adult arthritis from JIA is that of antinuclear antibodies. Unfortunately, antinuclear antibodies are neither sensitive nor specific to JIA diagnosis, but do help to identify a subset of patients at risk for JIA-associated uveitis. Conversely, although anti-cyclic citrullinated peptide testing is now part of the standard laboratory panel of tests for rheumatoid arthritis in adults, it is not considered an important diagnostic or prognostic test for JIA. Childhood-specific biomarker discovery is ongoing for many rheumatic diseases, including lupus nephritis, systemic JIA and macrophage activation syndrome, Kawasaki disease, dermatomyositis and localized scleroderma.

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In terms of therapy, decisions regarding the treatment of PRDs demand consideration of the growth, biological development and psychosocial development of the patient, issues that are irrelevant to ARD management. Additionally, some medications used in the treatment of ARDs are not used in PRDs owing to evidence of a lack of effect; for example, hydroxychloroquine, often used as a therapy for ARDs, has not been prescribed for the treatment of juvenile arthritis for two decades, after a seminal study (Brewer EJ *et al*. [1986] *N Engl J Med* 314: 1269–1276) showed that the benefit of hydroxychloroquine therapy resembled that of placebo. ARDs and PRDs can also be affected differently by drug dose: studies of biologics suggest that arthritis in childhood requires comparably higher doses of these agents than is needed for ARD control, with infliximab being one example (Ruperto N *et al*. [2007] *Arthritis Rheum* 56: 3096–3106).

Despite therapeutic progress being made, many PRDs constitute a major burden to childhood health. Given the shortage of trained pediatric rheumatologists, adult rheumatologists have an active role in the clinical care of children with PRD in the US; it is up to us pediatric rheumatologists to ensure that adult rheumatologists are aware that size matters in many ways when treating a child with PRD.