

Recent advances in pediatric laboratory medicine

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EDITORIAL

Pediatric medicine that spans from the perinatal period through adolescence is a field in its own right, as it requires knowledge about early growth and development that are not present in adult medicine. Indeed, it is during these crucial years that adult health and wellbeing are being carved. This statement is supported by epidemiological studies and meta-analyses indicating that many adult diseases are grounded in early childhood from conception, and thus should be viewed as developmental disorders (1, 2). Clinical laboratories are instrumental in the detection of subtle metabolic impairment present often at the onset of ailments. Their efficacy in assisting attending physicians in their diagnostic and follow-up endeavours is intimately linked to availability of dependable analytical methods and reliable reference values. Paediatrics is particularly sensitive to this problem as rapid developmental changes associated with child growth, can impose rapid discontinuous changes on the physiology of individuals (3-5).

This issue of the eJIFCC presents 5 articles focused on pediatric laboratory medicine. The first 2 review

articles relate to childhood obesity and metabolic syndrome. The first (6) gives an overview of the relationship of obesity with genetic and environmental factors, and raises awareness on the applicability and limitations of important potential biomarkers used in preventive and predictive medicine. The second (7) reviews the pathophysiology, consensus definitions and laboratory assessment of pediatric metabolic syndrome as well as potential novel biomarkers. The third (8) review is more generic and highlights the achievements and milestones of the Canadian CALIPER project, including the establishment of comprehensive bio-bank and database that have addressed several critical gaps in age- and sex-specific paediatric reference intervals impeding improvement of paediatric diagnostics. The fourth (9) article provides an overview of the diagnosis of primary neurotransmitters diseases (PNDs) through investigations using cerebrospinal fluid (CSF). It also calls for caution in sample management and analytical methodology as they potentially could affect diagnostic interpretation. The last short research article provides novel data on Pediatric Reference Intervals for Transferrin Saturation on a large CALIPER Cohort of Healthy Children and Adolescents (10).

These articles illustrate the effervescence in the field of paediatric laboratory medicine and invite professionals to continue providing state of the art data on this ever evolving subject.

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