TECHNOLOGY

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A Serum-Based Diagnostic Test to Identify Pediatric Septic Shock

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Background

Pediatric septic shock is a significant problem worldwide with mortality estimates ranging from 10–50%. Early diagnosis and treatment can substantially improve patient outcomes: for each hour treatment is delayed, patient mortality risk increases by 40%. Unfortunately, it is much more difficult to diagnose sepsis and predict related mortality in pediatric patients when compared to adults. As such, this technology addresses an unmet need for prompt detection of septic shock in pediatric patients.

Researchers at the University of Calgary have developed a diagnostic test for the early evaluation of pediatric septic shock patients.[1] The technology is based on serum metabolomics, or the identification of specific metabolite patterns in serum samples. The test can discriminate between septic shock and systemic inflammatory response syndrome (SIRS) in pediatric patients of different ages (infants, toddlers, and school age children). The metabolite profiles can also be used to accurately predict patient mortality.

Competitive Advantages

- Accurate diagnostic test for pediatric septic shock among infants, toddlers, and school age children.
- Method is able to predict mortality in pediatric septic shock patients more accurately than the use of Pediatric Risk of Mortality (PRISM) scores.

Stage of Development

- Method can discriminate between septic shock, SIRS, and healthy controls providing quantitative treatment guidance.
- Currently seeking validation with an external patient cohort.

[1] a) Mickiewicz, B. et al. Metabolomics as a novel approach for early diagnosis of pediatric septic shock and its mortality. *Am J Respir Crit Care Med.* 2013, 187(9):967-76; b) US20140205591 A1 "Metabolite Biomarkers for Diagnosis and Prognosis of Pediatric Septic Shock".