



Troponin i and its relation to disease severity in paediatric hypertrophic cardiomyopathy

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Abstract:

Troponin is associated with increased risk of adverse outcomes and correlates with multiple parameters of disease severity in adults with hypertrophic cardiomyopathy (HCM). However, prognostic and staging markers in adults are not always of value in children with HCM. This study assessed the ability of troponin I (TnI) to predict clinical variables in a paediatric cohort of HCM and compare this to well-established biomarker, NT-proBNP. TnI and NT-proBNP were measured in forty-nine patients with HCM [10.69±5.34 years old, 32 (65.31%) male] and elevated TnI is defined as ≥34ng/L (99th percentile reference limit). Evaluation included ECG, echocardiography, ambulatory ECG [19 (38.78%)], ICD interrogation [9 (18.37%)], exercise testing [19 (38.78%)], and cardiac magnetic resonance (CMR) imaging [16 (32.65%)]. TnI was detected in 19 (38.78%) and ≥34 ng/L in 14 (28.57%). There were significant differences in maximum wall thickness (MWT) z-score, E/E', mitral E-wave deceleration time, and CMR-assessed LV mass index between patients with TnI<34ng/L and TnI≥34ng/L. Continuous TnI, but not NT-proBNP, correlated with global longitudinal strain (rs=0.62, p<0.001), and there were significant differences in TnI levels in patients with ST-segment changes, and late gadolinium enhancement. Both biomarkers correlated with MWT z-score and E/E', although correlations were stronger for NT-proBNP. Multivariate analysis revealed TnI was an independent predictor of MWT and LV mass index. Troponin is a reliable biomarker to identify features of HCM (extreme hypertrophy and diastolic dysfunction) and may be an additive monitoring parameter in children. However, the utility beyond NT-proBNP, and the ability to identify subclinical ischaemia and fibrosis is uncertain.



Biography:

Sarah has completed an MSc in Cardiovascular Sciences (with distinction) from University College London at age 22. She is now entering her 4th year of medical school at Queen's University Belfast. Sarah is committed to pursuing a clinical career in cardiology alongside research activities.

Publication of speakers:

- The cancer-testis antigen BORIS photocopies the tumor suppressor CTCF in normal and neoplastic cells.
- Substrate elasticity provides mechanical signals for the expansion of hemopoietic stem and progenitor cells.
- 700 BORIS and its paralogue CTCF exhibit similar biological functions.
- Determination of Suitable Housekeeping Genes for Normalization of Quantitative Real Time PCR Analysis of Cells Infected with Human Immunodeficiency Virus and Herpes Viruses.