Background: Myocarditis, defined as the inflammation of the heart muscle, is a major cause of unexpected death in children and young adults. Clinical presentation of myocarditis may range from asymptomatic to life-threatening arrhythmias and heart failure, making viral myocarditis exceedingly difficult to diagnose. The current diagnostic gold standard, the Dallas Classification System, demonstrates a clinical sensitivity of less than 30%. To improve upon diagnostics, we examined the NUP98-ERBB4-PSEN1-NRG1 signaling axis previously implicated in heart disease. Here, we evaluated ERBB4 as a biomarker for diagnosing viral myocarditis.

Hypothesis: Differential expression of ERBB4 is specific to the pathogenesis of viral myocarditis and may be used to improve diagnostic sensitivity of human viral myocarditis.

Design: A retrospective cohort of 41 explant hearts (23 lymphocytic myocarditis, 18 other common cardiomyopathies) of pathologist confirmed diagnoses was examined for ERBB4 using immunohistochemical staining. Staining intensity was assessed by computer aided image analysis. Fold-change and signal intensities were normalized to the average intensity of normal controls.

Results: Preliminary data demonstrates that ERBB4 signal intensity was increased in left ventricle tissue in 17 of 23 representative myocarditis patients compared to normal controls. ERBB4 expression was increased even in areas away from characteristic inflammation and tissue damage, suggesting a pathological field effect.

Conclusion: Specificity and sensitivity of ERBB4 to detect viral myocarditis will be further assessed using ROC curves and patient follow-up. Our preliminary data indicates that ERBB4 may be useful as a diagnostic adjunct to the current Dallas Classification System in the detection of human viral myocarditis.

Themes:

Check (highlight) the most applicable theme according to the abstract.

| Innovation and Technology | Health and Wellness | Culture and Society | Sustainability and Conservation |

Comments: For this abstract, you do not need to differentiate the components of an abstract as it should be clear as the reader reads on. The background and conclusion is well written! I would suggest switching the order of your hypothesis and design as you already begin to talk about your study before your hypothesis. As MURC is a generalist conference, I would recommend further explaining a terms or concepts and avoid using jargon.