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HEART FAILURE AND CARDIOMYOPATHIES
SESSION TITLE: CONCEPTS ON PERICARDITIS AND MYOCARDITIS

Abstract 13363: Intensification of the Inflammasome Formation in the Pericardium of Patients With Chronic Severe Pericarditis

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Abstract

Introduction: Pericarditis is a clinical syndrome characterized by an inflammation of the pericardium initiated by an ‘irritant’ triggering the response of the innate immune system. Interleukin-1 (IL-1) blockade has emerged as a treatment for the more severe forms of pericarditis, suggesting a central role of the inflammasome in the pathophysiology of pericarditis.

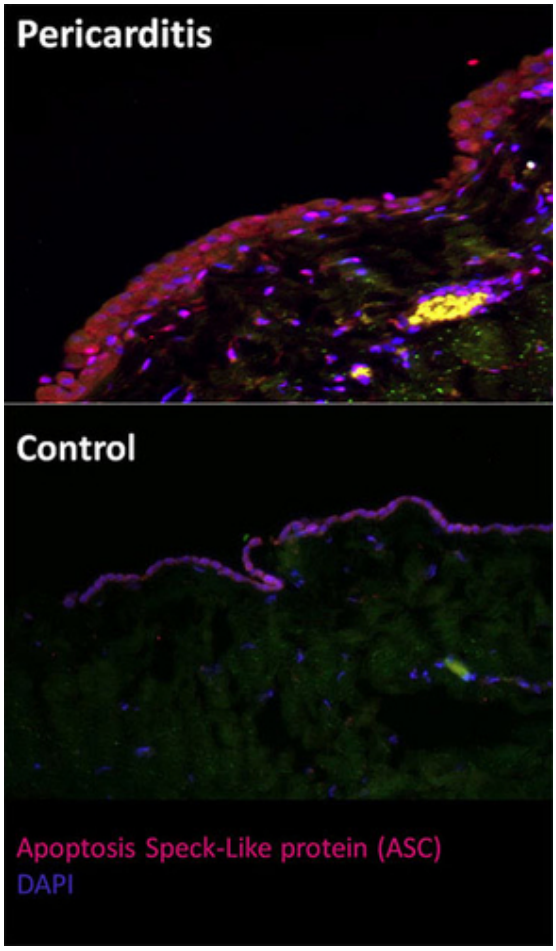
Hypothesis: We sought to determine the formation of the active form of the inflammasome in the pericardium of patients with chronic severe pericarditis.

Methods: We identified 6 patients with chronic severe pericarditis and retrieved pericardium samples during pericardiectomy. We used specimens of pericardium obtained at autopsy from subjects deceased of non-cardiac causes as controls. The inflammasome was evaluated by identifying ‘specks’ *via* immunostaining for the apoptosis-associated speck-like protein containing a carboxy-terminal or CARD (ASC), scaffold protein of the inflammasome, for the NACHT leucine-rich repeat, and pyrin domain-containing protein 3 (NLRP3), the sensor protein, and for cleaved caspase-1, the effector protein.

Results: We found a substantially thickening (>100% increase) of the pericardial layer in 5 out of 6 patients with chronic severe pericarditis and none in control patients (p=0.015). We found an increased staining for inflammasome components in the pericarditis cases vs. controls (semiquantitative assessment: ASC: 2.4±0.2 vs. 1.1±0.3, p=0.032; NLRP3: 1.64±1.9 p=0.02; cleaved caspase-1: 2.29±0.2 vs 1.40±0.09, p=0.040). The Figure shows a representative image of staining for ASC demonstrating a thickened and

intensively positive staining for pericarditis cases and a well-organized single layer of pericardial cells with only mild staining for ASC in controls.

Conclusions: This is the first description of intensification of the inflammasome formation and activation in the pericardium of patients with pericarditis.



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