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**Poster Title: REDUCED POST-INFARCTION MYOCARDIAL APOPTOSIS IN WOMEN: A CLUE TO THEIR DIFFERENT CLINICAL COURSE?**

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**Background:** Heart failure is less prevalent and has a better prognosis in women than in men. Moreover, when presenting with heart failure symptoms, women are more likely to have preserved left ventricular ejection fraction while men have more often left ventricular dysfunction.

**Objectives:** Aim of the current study was to analyze whether a difference in the rate of myocardial apoptosis, or programmed cell death, could explain the differences in functional and clinical heart failure characteristics after an acute myocardial infarction.

**Methods:** We selected 6 females and 15 males who had died after an acute myocardial infarction with permanent occlusion of the infarct-related artery. The in situ end labelling of DNA fragmentation (TUNEL) was used to identify apoptotic myocytes in the peri-infarct region. Immunohistochemistry was used to detect expression of activated caspase-3 and bax.

**Results:** Myocardial apoptosis (defined as colocalization of TUNEL and activated caspase-3) correlated significantly with parameters of unfavorable left ventricular remodelling, such as LV diameter to wall thickness ratio [R=+0.56, P=0.008]. Myocardial apoptosis was 10-fold higher in men than in women (12.9% [9.0-14.3] vs 1.3% [0.3-7.1], P=0.003). A similar difference was found in the expression of bax, a promoter of apoptosis (55% [44-61] vs 14% (2-42), P=0.012).

**Conclusions:** Myocardial apoptosis in the peri-infarct areas is higher in males than in females. As apoptosis is responsible for cell loss and progression toward ischemic cardiomyopathy, these findings may explain the more aggressive course of post-infarction remodelling in men and the relatively benign remodelling in women, potentially suggesting an increased resistance to ischemia in females. The recognition and thorough characterization of the influences of gender in cardiac disease may indeed provide keys to cardiovascular pathophysiology, which may eventually benefit both sexes.