

to present with fatigue, neck pain, syncope, nausea, right arm pain, dizziness and jaw pain. For most symptoms of AMI, adjusting for age and other variables made no significant difference to the magnitude of the effect.

**Conclusions:** Women are significantly less likely than men to experience chest pain and are much more likely than men to experience other associated symptoms of AMI. We recommend that public health campaigns on symptom presentation of AMI continue to promote chest pain as the cardinal symptom of AMI, but also reflect a wider spectrum of possible symptoms and highlight potential differences in symptom presentation between men and women.

doi:10.1016/j.hlc.2011.05.016

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#### Wandering Hearts: Acute Cardiac Management in the Regional Setting

S. Clune\*, M. Murphy, J. Blackford

*La Trobe University, Australia*

Evidence has demonstrated the disparity between the burden of disease for rural and urban Australians. Many studies have investigated the cause and ramifications of this disparity. However, few have sought to clarify the efficacy of treatment for rural Australians during an acute myocardial infarction (AMI). Extant literature, related to treatment of cardiovascular disease (CVD), discusses guidelines for treatment and follow-up requirements. A vast majority of this discussion centres on the urban experience. This study investigates concordance with treatment guidelines for AMI from a rural perspective.

A quantitative, retrospective study was undertaken. A review of 204 medical files was conducted, which included all chest pain and angina admissions to a rural base hospital over a 12 month period. The study used a specifically constructed audit tool, which sought to capture patient demographics, clinical findings and concordance with treatment guidelines. Significant correlations between clinical findings and transfer for treatment were analysed using Pearson's Correlations and Regression analysis.

The results indicated that age ( $p < 0.001$ ), employment status ( $p < 0.01$ ) and acute ECG changes ( $p < 0.01$ ) were significant determinants for patients transferred and those patients treated regionally. There was no evidence of differences in medical intervention for those patients transferred when compared to those not transferred. Concordance with consensus guidelines for acute cardiac care ranged from 70 to 79% across both groups. Given that these research findings demonstrate concordance with the treatment guidelines other services that would reduce the need for unplanned cardiac presentations need to be considered.

doi:10.1016/j.hlc.2011.05.017

#### ISHR/CSANZ Student Investigator Prize

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#### Chronic Low Dose $\Delta^9$ -Tetrahydrocannabinol Administration Prevents Functional and Electrophysiological Myocardial Changes in SHR and SHR/STZ Rats by Antioxidant and Anti-inflammatory Mechanisms

R. Vella\*, A. Fenning

*CQ University, Rockhampton, Australia*

It is well established that oxidative stress and inflammation initiate cardiovascular dysfunction associated with poorly managed hypertension and diabetes. The aim of this study was to examine the antioxidant, anti-inflammatory and cardio-protective effects of  $\Delta^9$ -Tetrahydrocannabinol (T) (0.15 mg/kg/day for eight weeks) in two-month-old spontaneously-hypertensive (SHR) and spontaneously-hypertensive-diabetic (SHR/STZ) rats. Rats were randomly assigned to a treatment group and WKY rats were used as controls. SHR and SHR/STZ rats displayed elevated blood pressure, decreased serum levels of nitric-oxide (NO) and increased serum malondialdehyde and IL-1 $\beta$  concentrations. Electrophysiological and functional alterations in SHR and SHR/STZ manifested as prolonged action potential duration at 20%, 50% and 90% (WKY 58.81  $\pm$  3.15; SHR 97.87  $\pm$  5.95\*; SHR/STZ 123.64  $\pm$  9.18\*) of repolarisation, reduced developed and end systolic pressure and reduced rates of contraction and relaxation. T treatments did not decrease blood pressure but improved alterations in NO, MDA and IL-1 $\beta$  concentrations. Improvements in developed pressure, end systolic pressure and maximal rates of contraction (SHR 1078.33  $\pm$  119.4\*; SHR + T 1655.17  $\pm$  125.42\*\*; SHR/STZ 1488.0  $\pm$  211.87; SHR/STZ + T 1813.33  $\pm$  97.67) and relaxation as well as the attenuation of prolonged action potential durations at 20%, 50% and 90% (SHR + T 75.23  $\pm$  5.69\*\*; SHR/STZ + T 94.36  $\pm$  9.93 $^\#$ ) of repolarisation were observed in T treated SHR and SHR/STZ. These results support the hypothesis that increased oxidative stress, decreased serum NO and systemic inflammation play an integral role in the development of cardiovascular dysfunction in 16-week-old SHR and 16-week-old SHR with eight weeks of induced diabetes. Furthermore, low-dose, chronic, T treatment prevents electrophysiological and functional changes in the myocardium of SHR and SHR/STZ rats by antioxidant and anti-inflammatory mechanisms.

doi:10.1016/j.hlc.2011.05.018