

## 19. Disparities in health care delivery and hospital outcomes between expatriates and nationals presenting with acute coronary syndromes in Saudi Arabia

Hussam AlFaleh, Khalid AlHabib, Ahmad Hersi, Tarek Kashour, Anhar ullah, Sukri AlSaif, Khalid AlNemer, Amir Taraben

**Background:** Saudi Arabia has a large expatriate population. We explored the difference and similarities between Non-Saudi patients (NS) presenting with an acute coronary syndrome and Saudi nationals (SN) with respect to therapies and clinical outcomes.

**Methods:** ACS patients enrolled in the Saudi Project for Assessment of Acute Coronary Syndrome (SPACE) from 2005 to 2007 are the subjects of this analysis. 5055 patients were enrolled in SPACE. Propensity score matching and logistic regression analysis were performed to account for major imbalances in age and gender.

**Results:** 2031 ACS patients were available for analysis. The mean age was  $56.2 \pm 9.8$ , and males formed 83.5% of the study cohort. SN were more likely to have risk factors of atherosclerosis. ST-elevation MI (STEMI) was the most common ACS presentation in NS, while Non-ST ACS was more common in SN. The median symptom to door time was significantly longer in NS patients (175 min (197) vs. 130 min (167),  $p = 0.027$ ). There were no differences in pharmacological therapies between the two groups, except that NS were more likely to receive fibrinolytic therapy. NS were less likely to undergo percutaneous coronary interventions (PCI), or primary PCI compared to Saudis (32.6% vs. 42.8%,  $p = 0.0001$ , and 7.8% vs. 22.8%,  $p < 0.001$ , respectively). Hospital mortality, cardiogenic shock, and Heart failure were significantly higher in NS compared to SN. After adjusting for baseline variables, and therapies, the odds ratio for hospital mortality, and Cardiogenic shock in NS were 2.9 (95% CI 1.5–6.2,  $p = 0.004$ ), and 2.8 (1.5–4.9),  $p < 0.001$ , respectively.

**Conclusion:** Our findings indicate disparities in hospital care between NS, and SN ACS patients. NS patients had worse hospital outcomes potentially reflecting unequal health coverage, and access to care issues.

<http://dx.doi:10.1016/j.jsha.2015.05.200>

## 20. Prediction of 10-year risk of hard coronary events among Saudi adults based on prevalence of heart disease risk factors

Muhammad Adil Soofi, Mostafa Adel Youssef

**Aim:** Cardiovascular disease is becoming the leading cause of mortality and morbidity worldwide, and developing countries are the main contributors to this trend. Saudi Arabia, which is considered a rapidly developing country,

faces progressive urbanization and the adoption of a westernized lifestyle, factors which contribute to the rising burden of cardiovascular disease. Our study estimates the prevalence of coronary risk factors and predicts hard coronary artery events over 10 years in an urban Saudi cohort. **Methods:** A cross-sectional observational study was conducted on a Saudi population. The study involved Saudi subjects aged more than 20 years without a history of coronary heart disease. Demographic variables and Hard Coronary Events (HCE) risk factors were measured. Each subject's 10-year HCE risk was estimated by means of the Framingham Risk Score (FRS).

**Results:** A total of 4932 subjects (2215 men and 2717 women) were examined, the majority (85%) of whom were less than 40 years old. The risk of developing HCE within the next 10 years was low in 92.6% of subjects, intermediate in 3.2% and high in 4.1%. On considering diabetes as HCE risk-equivalent, 26% of subjects were at high risk for hard coronary events in 10 years, The HCE risk progressively increased with age and was higher in men.

**Conclusions:** Our study is the first to estimate the 10-year risk of HCE among adults in an emerging country and discovered a significant proportion of younger aged population are at risk for development of hard coronary events. Public awareness programs to control risk factors are warranted.

<http://dx.doi:10.1016/j.jsha.2015.05.201>

## 21. Cardiovascular disease risk attributed to blood fish oil (omega-3 fatty acid) levels differ significantly in Saudi Men and Women

Tayeb Bassam, H. Robert Superko, Michael Caulfield

**Background:** Cardiovascular disease is a major health problem in the Saudi population. Fish consumption and blood fish oil levels have been linked to CHD risk in European, American, and Japanese populations. A knowledge gap exists regarding blood omega-3 fatty acid levels in the Saudi population. The omega-3 index (% of fatty acids composed of EPA + DHA)  $< 3.5\%$  has been linked to increased CVD risk in European and American investigations. A EPA/AA ratio  $< 0.75$  has been linked to increased CVD risk in a Japanese population. The aim of this investigation is to determine population distribution and gender ranges in a Saudi population.

**Methods:** This population study involved 2672 consecutive blood samples (1544 men and 1128 women) from residence of Saudi Arabia that were de-identified and analyzed for eicosapentaenoic acid (EPA), Docosahexaenoic acid (DHA), and arachadonic acid (AA) using mass spectroscopy. Data was analyzed for analysis of variance following adjustment for age differences between genders.

**Results:** For the entire population mean  $\pm$ SD, age =  $44.8 \pm 14.2$  years, omega-3 index =  $3.91 \pm 1.45\%$ , EPA =  $0.27 \pm 0.22\%$ , DHA =  $3.67 \pm 1.37\%$  and AA =  $0.36 \pm 0.13\%$ .