(88%), physical inactivity (77%), overweight/obesity (BMI $\geq 25$ kg/m$^2$ and $\geq 30$ kg/m$^2$ respectively, 72%), obesity (36%), abdominal obesity measured by WHR (59%), dyslipidaemia (22–37%), diabetes (22%), hypertension (22%) and current tobacco use (12%). One quarter of the participants were estimated to have $>10\%$ risk to develop CVD within the following 10-years. Furthermore, this study showed that expatriates had significant negative effects on behavioural risk factors after residing in KSA, namely: high rate of physical inactivity, high consumption of fast food, low consumption of fruit and vegetable. However, there was no effect on the pattern of tobacco use. The prevalence of CVRFs is substantially high among the study population. To combat the future expected burden of CVDs, a proposed prevention programme for employees’ cardiovascular wellness is designed and recommended to be implemented and institutionalized within the university.

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27. The impact of introduction of code-stemi program on clinical outcomes of acute st-elevation myocardial infarction (stemi) patients undergoing primary pci: Single center study in Saudi Arabia

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This study was conducted to evaluate the effect of direct Emergency Department activation of the Catheterization Lab on door to balloon (D2B) time and outcomes of acute ST-elevation myocardial infarction (STEMI) patients in King Khalid University Hospital (KKUH). Establishing dedicated comprehensive STEMI programs aiming at reducing door to balloon time will impact favourably the outcomes of patients presenting with acute STEMI. This was a retrospective cohort study that involved 100 patients in KKUH who presented with acute STEMI and underwent primary percutaneous intervention (PPCI), between June 2010 and January 2015. The cohort was divided into two groups, the first group consisted of 50 patients who were treated before establishing the Code-STEMI protocol, whereas the second group was 50 patients who were treated according to the protocol, which was implemented in June 2013. Code-STEMI program is a comprehensive program that includes direct activation of the cath lab team using a single call system, data monitoring and feedback, and standardized order forms. The mean age in both groups was 54 ± 12 years and 86% (43) and 94% (47) of the patients in the two groups were males, respectively. 90% (90) of patients in both groups had one or more comorbidities. Code-STEMI group had a significantly lower D2B time with 70% of patients treated within the recommended 90 minutes (median = 76.5 min, IQR: 63–90 min) compared to only 26% of pre code-STEMI patients (median = 107 min, IQR: 74–149 min) In-hospital complications were lower in the Code-STEMI group; however, the only statistically significant reduction was in non-fatal re-infarction, (8% vs. 0%, $p = 0.043$). In addition, the number of patients with more than one in-hospital complications was also reduced by 20%. Implementation of direct ER-Catheterization lab activation protocol was associated with a significant reduction in D2B time, and an overall improvement of in-hospital outcomes.

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28. Validity of three risk stratification systems in a Saudi population

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Coronary artery disease (CAD) is the leading cause of death worldwide. Although there are a number of algorithms in use for determining risk and thus predicting future cardiovascular events, the data available regarding their validity among the Saudi population are insufficient. We studied the validity of three clinical score systems that are used to define high-risk patient groups: the American College of Cardiology/American Heart Association (ACC/AHA) Pooled Cohort Risk Equation, the Framingham risk score (FRS), and the European Systematic Coronary Risk Evaluation (SCORE). The new ACC/AHA Pooled Cohort Risk Equation can define high-risk group among Saudi population better than the older risk stratification systems. We analyzed data from 462 patients aged $\geq 40$ years with no previous history of CAD. High-risk features were a coronary calcium score (CCS) of $\geq 400$ or, if the CCS was in the $\geq 75$ percentile using Multi-Ethnic Study of Atherosclerosis (MESA) score. The scores for the three algorithms were then calculated using the participants’ clinical data and lipid profiles, which had been obtained before performing computed tomography. In all, 87 (18.8%) patients were positive for coronary calcification. Among them, 60 (13%) were classified as being at high risk according to the MESA score. Analyzing these patients by The ACC/AHA Pooled Cohort Risk Equation resulted in 9 (15%) as being at low risk, 12 (20%) at intermediate risk, and 39 (65%) at high risk. The FRM risk classification resulted in 14 (23%) being at low risk, 13 (22%) at intermediate risk, and 33 (55 %) at high risk. The SCORE risk classification showed 24 (40%) at low risk, 12 (20%) at intermediate risk, and 24 (40%) at high risk, with P $< 0.0001$ shown in the figure below. The ACC/AHA Pooled Cohort Risk Equation defined the higher risk group of patients in the Saudi population significantly better than the other two risk-score algorithms.

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