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Rheumatoid arthritis and the risk to the coronary tree of life

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Topic(s):
Acute Cardiac Care – Prehospital and Emergency Department Care

Citation:

Introduction: 'David' a 45 year old male, presented to the emergency department (ED) with history of shortness of breath whilst working as a tree surgeon. His job involved heavy lifting and strenuous activity at which he was struggling. He had one episode of burning chest pain which prompted his attendance to ED. In the ED I completed a comprehensive health history, advanced physical assessment and risk stratification to assess the likelihood of coronary heart disease (CHD). Acute coronary syndrome and thoracic causes were ruled out as a priority. Traditional risk factors included a cholesterol of 7.4 mmol/l, LDL 4.8 mmol/l and positive family history of CHD in his mother. As a result the HEARTscore placed him at low risk of major cardiac event (MACE) at 30 days.

The problem: David was suffering with rheumatoid arthritis (RA). Rheumatoid arthritis is a chronic inflammatory condition with a similar pathogenesis to atherosclerosis, and a reduced life expectancy due to cardiovascular disease. Patients with RA are 60 % more likely to suffer a vascular event. David was followed up in the nurse-led chest pain clinic and performed an exercise stress test which was positive for symptoms with ST changes. I prescribed an anti-platelet, statin and calcium channel blocker medications and referred him for urgent coronary angiography. David was diagnosed with severe three vessel CHD, with 100% occlusion of the right coronary artery and was managed with complex multi-vessel stent insertion.

Challenges: Traditional risk stratification tools such as HEARTscore may underestimate the CHD risk in the patient with RA. David was classified as low risk MACE and was not complaining of typical anginal symptoms, however once RA was considered a risk factor, further investigation was instigated in the nurse-led service, resulting in the prompt diagnosis and treatment of severe CHD.

Implications for practice: Although David did have two traditional risk factors for CHD, he was 'low risk' as per the HEART score. I had the specialist knowledge to take into consideration the inflammatory nature of vascular disease and the extra inflammatory risk that RA poses. It is recommended that a 1.5 multiplication of risk be calculated, which resulted in an intermediate MACE risk. As a result David was diagnosed and treated within a short time frame and avoided ACS or worse. David is now managed on evidence based cardiac medications alongside two suppressant drugs. Now diagnosed with CHD his choice of analgesia is limited with COX 2 inhibitors contraindicated in CHD.

Change: It has been suggested that patients with RA be screened for CHD, this had not happened in this case. As a result of this case I plan to collaborate with the rheumatology nurse to instigate a CHD screening programme. In the acute setting patients with severe inflammatory conditions such as arthritis must be considered at higher risk of cardiac events and risk stratification recalculated as required.