Module 2.01:
Pain down left arm

SCENARIO

Pain down left arm

Mr Jethro Walker is having a great time at the music festival until he feels a crushing pain in his chest and down his left arm, and collapses in the mud. His friends call 999. They are unaware that Mr Walker has been on a calcium channel antagonist for his angina pectoris, and could not find his usual 'GTN spray' in his pockets. After initial treatment in the ambulance (including oxygen and pain relief), and an ECG showing ST elevation, the paramedics take Mr Walker to a tertiary centre for percutaneous coronary intervention (PCI). Mrs Marietta Walker arrives very concerned about her husband, who has just had a chest X-ray, and is alarmed by the cardiac monitor. Dr Aaron Jump from the coronary care unit (CCU) tells her that he has had a heart attack. Although Mr Walker starts to recover over the next day, and even starts asking for a full English breakfast, he then suffers a cardiac arrest. 'CPR' is attempted because this was his expressed wish. Mr Walker dies.

Dr Jump feels unable to complete the death certificate. He is aware of the importance of certifying 'underlying cause of death' accurately for the 'routine data'. He refers Mr Walker's case to the coroner, who orders an autopsy, thus delaying the funeral. The pathologist's report shows *"occlusion of the left coronary artery with a full thickness infarct of the left ventricular wall".* Dr Jump recalls that there has been controversy about calcium channel blockers and myocardial infarction, and thought that maybe there would be a meta-analysis if he looks.

Dr Jump finds that Mrs Walker is particularly distressed that she was not with her husband when he collapsed at the festival, and she thought that he was going to be fine once he got to hospital. She cannot understand why Mr Vijay Prabhu, who had been in the next bed, had an angioplasty within 4 days of having his first episode of chest pain, and is now doing very well in cardiac rehabilitation. Dr Jump knows that Mr Prabhu's ECG had shown a non-ST elevation MI (NSTEMI), and he had echocardiography, but Dr Jump does not allow himself to be drawn into a comparison of the two patients' circumstances. He is aware that, of the ten patients admitted to CCU that week, two died, four went to the general ward for cardiac rehabilitation (which included health promotion interventions about diet, exercise, and other lifestyle issues), two were shown to have non-cardiac chest pain, and two continued on CCU (one on inotropic support for *"post-MI left heart failure"*, the other also receiving additional treatment for a pulmonary embolus). Dr Jump is also aware of the difficulties in quantifying which risk factors to address. It was not that straightforward to apply Bradford-Hill criteria to the vast evidence-base, and the patients were sceptical of what advice they should heed from conflicting messages. Ideal study designs for evaluating some interventions were not necessarily practical or ethical, and there were confounders to address (e.g. standardization; regression), let alone a need for more qualitative research. Dr Jump wonders about compliance with interventions post-rehabilitation, and the likely outcomes overall.