Commissioner's Comment

Missed diagnosis of myocardial infarction

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Differing symptoms

A recent report in the journal of the American Heart Association, *'Women's Early Warning Symptoms of Acute Myocardial Infarction'* (Circulation, 2003; 108: 2619–23), presents the results of a study of the prodromal symptoms experienced by European women who had suffered an acute cardiac ischaemic event. The study reveals that women, like men, experience prodromal symptoms prior to an acute myocardial infarction. The study was unable to determine conclusively that prodromal symptoms were predictive of impending myocardial infarction. But what it did suggest was that symptoms experienced by women differ from those experienced by men. Further, about 95% of the women studied reported new or different symptoms in the month prior to myocardial infarction.

The most common symptoms reported by the women studied were unusual fatigue (70%); sleep disturbance (48%); shortness of breath (42%); indigestion (39%); and anxiety (35%). Only 30% reported chest discomfort before their myocardial infarction. It was also noted that the women studied tended to express their experience of chest pain in a qualitatively different way to that described by men.

The authors cautioned that the *'lack of significant chest pain may be a major reason why women have more unrecognised heart attacks than men or are mistakenly diagnosed and discharged from emergency departments'*. In this study the researchers found that 43% of women reported no chest discomfort during their heart attack. For those who did, the main locations were in the back and high chest.

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Recent case

A recent complaint to HDC highlighted the difference in the perception of pain and other prodromal symptoms experienced by women suffering from ischaemic heart disease.

Mrs X, a woman in her mid-fifties, had a busy, stressful but rewarding business career. She travelled often, including to tropical areas where unusual illnesses might be contracted. Mrs X had several risk factors for cardiac disease – smoking and drinking, significant work stress, and being overweight. Mrs X also had a family history of ischaemic heart disease, although this was not communicated to her general practitioner, Dr Y.

Mrs X first presented to a locum at Dr Y's clinic with an acute illness documented as *'unwell with fever, chills, rigors, back pain, slightly cyanosed, nauseated++. Chest clinically clear, tachycardia 100, HS dual.'* She was described as *'better with panadol'*. Advice was given to continue with Panadol, a chest X-ray was ordered, and the patient was asked to return if she needed urgent care. Bloods were described as compatible with a viral infection.

When seen by Dr Y three weeks later Mrs X remained lethargic and was given a trial of weekly vitamin B12 injections for a total of three weeks.

Mrs X was seen again by Dr Y 12 weeks later with a further acute illness documented as *'Pain shoulder blade, tingling arm, vomiting, breathing OK, sitting resting on bed'*. Dr Y visited her at home and noted *'came to the door not acutely SOB or in distress. Had ache pain across back of chest for 24hrs similar to pain when seen in [earlier consultation with locum]. Had fever, chills, and tingling both upper limbs, chest and headache now settled. Had not had history of relapsing fever and/or bed sweating. OE. chest clinically clear, no rub, resps. 17, pulse 86, BP 142/76. No rash, Kernigs NAD. Drinking OK, no vomiting or diarrhoea. No cough today. Neurological observations normal, fields full on confrontation. Assessment – viral. Plan – cbc/crp/esr/cxr/continue fluids/paracetamol/nurofen/see sos/off work certificate.'*

When seen again two days later by another doctor from Dr Y's clinic, Mrs X reported that although tired she had no other complaints. Her back pain had resolved. Her temperature was 37.6 and there were no other positive findings. She expressed concern at the raised CRP [C reactive protein] level of 76 and a similar rise of 38 at the time of her previous illness. Further bloods were ordered to investigate for malaria and other infections related to Mrs X's previous tropical travel.

At subsequent weekly visits to the GP, Mrs X reported ongoing tiredness and excessive sleeping. Mrs X had her own strong opinions regarding her health and how it should be managed. She declined Dr Y's offer of a specialist referral two weeks later for a second opinion. However, a referral was subsequently made in response to pressure from family and work colleagues. Sadly, an acute cardiac event prior to specialist review led to cardiac arrest and death.

On the day before her cardiac arrest Mrs X was seen by another practitioner at an after-hours clinic and diagnosed with a viral illness. Later that night she presented to the local hospital Emergency Department and was triaged by a nurse as non-urgent. After waiting for several hours in the middle of the night Mrs X returned home unseen and subsequently collapsed and died at home. She was seen by at least three general practitioners and two nurses during the course of her illness and none investigated a possible cardiac aetiology for her symptoms.

A post-mortem examination revealed *'extensive fresh, recent and aged myocardial infarcts of the left ventricle complicating severe occlusive coronary artery atherosclerosis'*.

Complaint to HDC

Mrs X's son subsequently laid a complaint to HDC, stating that after *'fairly lengthy correspondence'* with Dr Y, he was *'not entirely satisfied with the answers'* (as to why Dr Y failed to diagnose her heart problem) and seeking an independent review of her medical notes to determine whether *'a reasonable GP should, in all the circumstances, have diagnosed [Mrs X's] condition'*.

As the Commissioner's independent clinical advisor, I reviewed the medical records and advised as follows: *'The general practitioner was focused in his diagnostic thinking on work pressure and unusual infection contracted in [tropical areas] as the explanation for [Mrs X's] episodes of illness with backpain, sweating and malaise. This "mindset" was reinforced by the history from [Mrs X] of fever and chills. The presence of the symptom of fever would cause the GP to believe the symptoms indicated an infective cause (? viral) with muscular backpain, a common associated symptom. He pursued laboratory tests for malaria and other illnesses and ordered a chest X-ray. A number of previous consultations indicated that Dr Y was aware of risk factors for cardiac disease for [Mrs X] and he had discussed these on a number of occasions.'*

The fact that prior to Mrs X's death Dr Y was unaware of her family history of heart disease was of concern to her family. In the past, paper-based records used by general practitioners in New Zealand provided a prominent space on the front of the medical record for this sort of information, which would catch the immediate attention of any new doctor. The computerised records now widely used do not always provide such a visible site for this information.

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I advised the Commissioner that Dr Y should have considered cardiac disease as a possible diagnosis and carried out investigations to explore this or rule it out. Although Mrs X did not present with significant chest pain, she did present with unusual fatigue as well as pains in her upper limbs and at the back of her chest, which the study cited above suggests should be of particular concern in female patients at risk of heart disease. However, in all other regards, the standard of documentation and the nature of the comments made by Dr Y in the medical records indicated a very good doctor with standards of care well above average. He exhibited care and genuine interest in the well-being of his patient. Clearly the missed diagnosis and subsequent death of Mrs X has provided a profound and tragic lesson for Dr Y in the varied presentations of angina. This is demonstrated by his reply to the family:

'As a result of [Mrs X's] death, I now actively seek to disprove that patients with back/chest/abdominal pain may have ischaemic heart disease. In other words I start from an assumption that the pain could be cardiac in origin…Working from that position may allow me to diagnose a case of ischaemic disease that might otherwise be missed.'

In consultation with the bereaved family and Dr Y, the Commissioner decided that the best resolution of this case would be to report its broader educational message.

It is hoped that the lessons from the case will be of value to general practitioners – and may help protect future patients.

'Emphasis on the biomedical domain and the randomized controlled trial (RCT) alone reflects a reductionist approach that fails to do justice to the philosophy of general practice. The art of medicine is founded on context, anecdote, patient stories of illness and personal experience, and we should continue to blend this with good quality and appropriate research findings in patient care.'

Jacobson LD, Edwards AG, Granier SK, Butler CC. Evidence-based medicine and general practice. Br J Gen Pract. 1997 Jul;47(420):449-52.