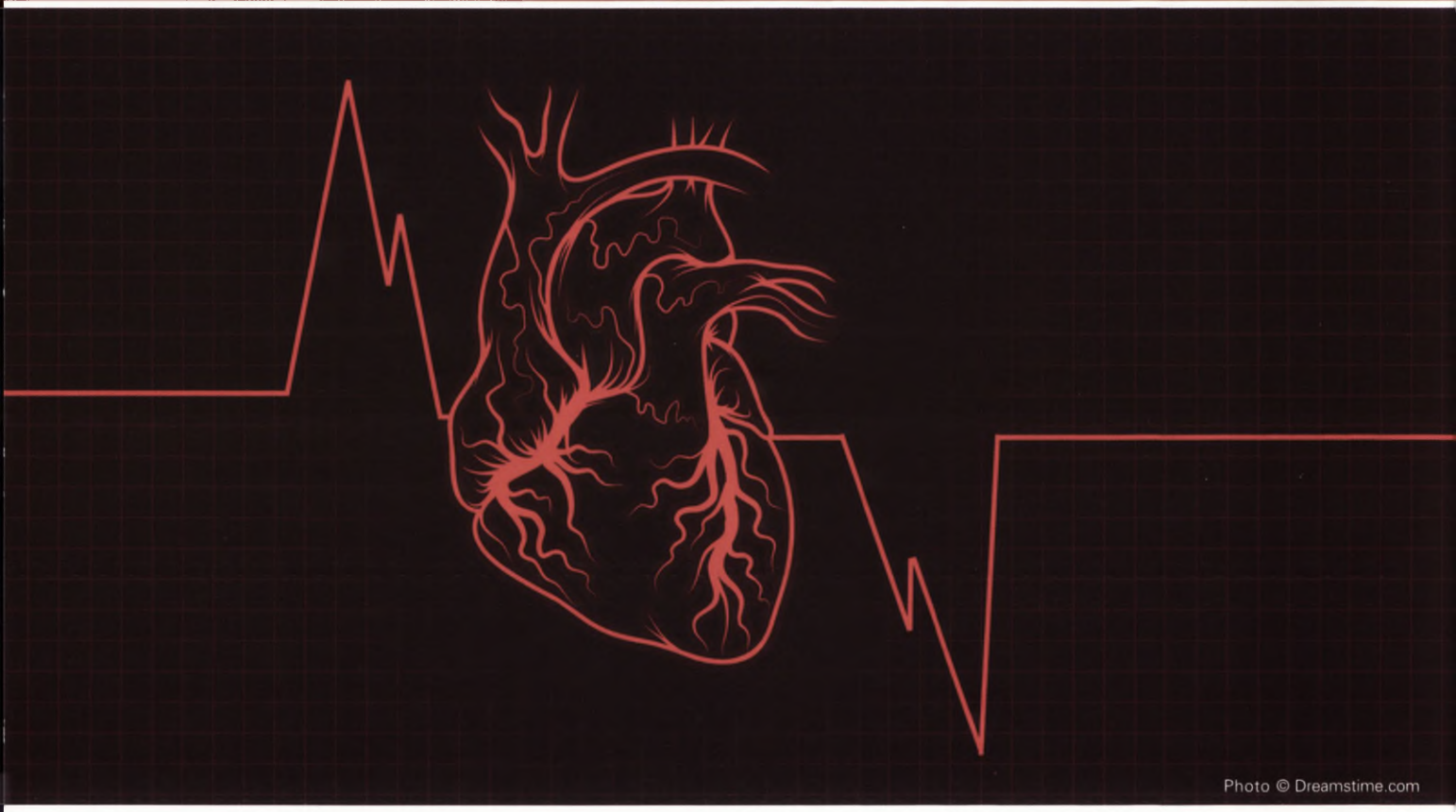
Association of post-accident psychological injury with risk of acute myocardial infarction

By Paul Halley



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September 2004 saw the publication of a number of articles in the *Lancet* based on the INTERHEART study.[1] The INTERHEART study was a case-controlled study of acute myocardial infarction (AMI) in 52 countries, including Australia. The study aimed to look at potentially modifiable risk factors associated with AMI.

As well as the usual suspects of smoking, raised cholesterol, high blood pressure, diabetes, obesity, lack of daily consumption of fruits and vegetables and lack of physical activity, psychological factors were found to be significantly related to AMI. Such association was found to be consistent among men and women, both old and young, and in all regions of the world. While current smoking and raised cholesterol were the two strongest risk factors, psychological factors (particularly depression) were strongly associated with AMI at a level similar to diabetes and hypertension.

The INTERHEART study found that feeling sad, blue or depressed for two weeks or more in a row was associated with AMI across different populations and across groups of people with different ethnic origins. Further, the study found that suffering financial stress or major life events were twice as common for those during the year preceding their acute myocardial infarction than for those who did not have an AMI.

Importantly, the study confirmed that individual risk factors had a cumulative effect, in that having two or more of the risk factors significantly increased the risk of AMI.

Practitioners will be well aware of the common post-accident trilogy of decreased exercise, increased weight and psychological distress following physical injury. However, what may be less readily apparent to practitioners is that this trilogy can act in a cumulative manner to increase the risk of AMI in the post-accident period. This remains true even in circumstances where the injured person had risk factors prior to the accident, such as smoking.

Practitioners should thus be alert to the occurrence of potentially compensable acute myocardial infarction following an accident, even when such acute myocardial infarction does not occur as a direct consequence of the accident.

In *Rzanovski v Serepiso & TAC* (unreported Victorian County Court 2006), the plaintiff brought application for a serious injury following a transport accident. The plaintiff was a long-term smoker who worked as a part-time cleaner up until a transport accident on 1 January 1999. At the time of the transport accident, the plaintiff was aged 57. As a result of the transport accident, the plaintiff suffered pelvic fractures.

In the post-accident period, the plaintiff suffered from depression, became inactive, put on weight, and slightly increased his level of pre-accident smoking. In September 1999, the plaintiff suffered an AMI with resultant hypoxic brain injury.

The plaintiff sought leave to bring common law proceedings on the basis of having sustained a serious injury, being a serious impairment of the function of his brain, by reason of hypoxic brain damage caused by the acute myocardial infarction.

Evidence was called at the hearing of the serious injury application, which relied upon the findings of the INTERHEART study and clinical experience.

The plaintiff successfully argued that, on the balance of probabilities, his post-accident depression, inactivity, weight gain, and the fact that he had experienced a significant life event (being the accident itself) contributed to his acute myocardial infarction leading to his hypoxic brain injury. Such claim was supported by the plaintiff's cardiologist and a number of the other experts. It should be borne in mind that *Seltsam v McGuiness* [2000] NSWCA 29 per Spigelman J, at paragraph 79 states:

> 'Evidence of possibility, including expert evidence of possibility expressed in opinion form and evidence of possibility from epidemiological research or other statistical indicators, is admissible and must be weighed in the balance with other factors, when determining whether or not, on the balance of probabilities, an inference of causation in a specific case could or should be drawn. Where, however, the whole of the evidence does not rise above the level of possibility, either alone or cumulatively, such an inference is not open to be drawn.'

In *Rzanovski*, the experts were able to elevate the plaintiff's post-accident depression, inactivity, weight gain, and the fact that he had experienced a significant life event to a cause on the balance of probabilities of the plaintiff's acute myocardial infarction.

Practitioners should thus be alert to the possibility of a causal association between a compensable accident and a subsequent AMI. Practitioners should particularly turn their minds to this possibility in circumstances where the potential plaintiff has suffered depression in the post-accident period. ■

Note: 1 Affect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (The INTERHEART Study): case controlled study, Lancet 2004; 364:937-952: Association of psycho-social risk factors with risk of AMI in 11,119 cases and 13,648 controls from 52 countries (The INTERHEART Study): case controlled study, *Lancet* 2004; 364:953-962.

Paul Halley *is a barrister at the Victorian Bar with wide experience, appearing in the High Court, Supreme Court, County Court, VCAT, the Coroner's Court and other tribunals such as the Medical Practitioners Board of Victoria. He appears regularly for both plaintiffs and defendants. Prior to coming to the Bar, Paul had 15 years' experience as a medical practitioner, with post-graduate qualifications in psychiatry and general practice.*

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