

Promising peptide biomarker may help identify heart injury more quickly

Sir Charles Hercus Health Research Fellow Dr Chris Pemberton from the University of Otago, Christchurch is researching a promising new biomarker which could specifically and rapidly identify heart injury.

Dr Pemberton and the team at the University's Christchurch Cardioendocrine Research Group have been working on a peptide biomarker which was previously thought to be absent from the circulation; however, preliminary evidence from a study of heart attack patients suggests this peptide is in fact present. The highest blood levels of this peptide were found to occur at the time of patient admission to hospital and then drop over the next four to eight hours. This has great potential to reduce the time of diagnosis as this peptide peaks in blood much earlier than established biomarkers such as Troponin T which requires a 6-12 hour wait combined with other tests such as ECG.

"This is exciting because it raises the possibility of doctors having an answer in one to two hours as opposed to six or more," Dr Pemberton says. "Such a test would prove invaluable as the heart suffers significant damage in the first 12 hours following a heart attack with a greater cumulative damage over the next 48 hours. Therefore, quick diagnosis is essential as it allows earlier introduction of appropriate therapies."

Dr Pemberton says a lot of time, effort and human misery surrounds the diagnosis of heart attacks and there is a real need for a good test to help accurately diagnose them more quickly and efficiently.

The research has sprung from the work of Professor Mark Richards, who heads the Christchurch Cardioendocrine Research Group. Over the last 10–15 years, the group has found that if you measure blood levels of BNP, a peptide produced by the heart, you have a good indicator for heart attack in the form of a blood test. During heart attacks and heart failure, blood BNP levels are markedly elevated and they accurately reflect how well the heart is doing; thus, regular measurement of blood BNP is also a good indicator of how well therapy is progressing.

This research is funded by the Health Research Council of New Zealand.



Key words:

- Heart injury, peptide biomarker

Key facts:

- Cardiovascular disease is a major cause of hospitalisation in NZ and death whilst in critical care

Aims of this research:

- To develop a good test to help accurately diagnose heart attack
- To investigate a peptide biomarker in the blood which is found to occur at the time of patient admission to hospital in those with heart attacks.

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