



TROPONIN AN ACCURATE INDICATOR OF HEART ATTACK IN INDIGENOUS PATIENTS

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MEASURING the level of a protein called troponin in the blood is one indicator of acute myocardial infarction (AMI), but the accuracy of the test has received minimal evaluation in Aboriginal and Torres Strait Islander peoples.

Queensland research led by Associate Professor Jaimi Greenslade, Advance Queensland Fellow at Royal Brisbane and Women's Hospital and the Australian Centre for Health Services Innovation at QUT, has shown that a single low-level high sensitivity cardiac troponin I (hs-cTnI) value can be used for early rule-out of AMI in Aboriginal and Torres Strait Islander patients. The research was conducted in conjunction with the Cairns Hospital and funded by Advance Queensland and the Brisbane Diamantina Health Partners.

Published today in the *Medical Journal of Australia*, the study evaluated data for Aboriginal and Torres Strait Islander adults (18 years or older) who visited the Cairns Hospital emergency department during the 2019 calendar year and were evaluated for acute coronary syndrome. Patients were recruited consecutively on weekdays (8 am -5 pm). All participants received standard care, including electrocardiography and hs-cTnI assessments at presentation and 2-3 hours later, as well as appropriate imaging for coronary artery disease. Thirty days later, research nurses followed up patients by telephone and reviewed medical records for cardiac events, cardiac investigations, and contact with health care providers

"Fifteen people (14%) had hs-cTnI values of 2 ng/L or less, none of whom reached the primary or secondary endpoints," Greenslade and colleagues reported.

"Test sensitivity was 100% and the negative predictive value (NPV) was 100%. Sensitivity and NPV were also 100% with the cTnI cut-off recommended by the European Society for Cardiology (4 ng/L); this cut-off excluded AMI for 30 people (27%), none of whom reached the primary or secondary endpoints.

"Diagnostic accuracy was similar for patients who presented to the emergency department and those who had been transferred from other facilities.

"Our findings support using single low level hs-cTnI values to exclude AMI in Aboriginal and Torres Strait Islander people; applying either presentation hs-cTnI cut-off value (2 or 4 ng/L) enabled early exclusion without missing any cases of AMI or major adverse cardiac events."

The authors also reported that large proportions of the study participants had risk factors for cardiovascular disease - 66% were smokers, 40% had diabetes, 56% had hypertension, and 57% had a family history of coronary artery disease.



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"A low hs-cTnI value may safely exclude AMI, but Aboriginal and Torres Strait Islander people may benefit from referral to culturally appropriate medical services for cardiac risk factor management," Greenslade and colleagues concluded.

"Our study advances our understanding of ACS assessment by ensuring that our evidence base reflects the diversity of people in our health care system."

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