Rapid Access Chest Pain Clinics: An Australian Cost-Benefit Study

R. Kozor 1,∗, J. Mooney 2, H. Lowe 3, L. Kitharides 3, S. Patel 4, D. Celermajer 4, A. Thiagalingam 5, G. Figtree 1, C. Chow 5

1 Royal North Shore Hospital, St Leonards, Australia
2 The George Institute, Sydney, Australia
3 Concord Repatriation General Hospital, Concord, Australia
4 Royal Prince Alfred Hospital, Camperdown, Australia
5 Westmead Hospital, Westmead, Australia

Chest pain hospital presentations are a large healthcare burden in Australia and around the world. Its management requires specialist assessment and diagnostic tests, which can be costly and often lead to unnecessary hospital admissions. There is a growing unmet clinical need to improve the efficiency and management of chest pain. This study aims to evaluate the cost-benefit of a rapid access chest pain clinic (RACC) model of care.

Methods: Firstly, 4 Sydney hospitals were retrospectively reviewed over 12 months (2016) for number of chest pain presentations and their admission/discharge rates. Secondly, 3 of the 4 hospitals implemented a RACC and the related costs were estimated using data from 2017–18.

Results: A total of 16,588 chest pain presentations were recorded. Hospitals A, B and C admitted 52%, 66% and 66%, respectively, of these patients, and hospital D admitted significantly less at 34%. Hospitals A, C and D implemented a RACC but each operating with slightly different staffing/diagnostic services. All RACCs had similar average costs per patient of $461.20, $435.27 and $461.20 (hospitals A, C and D respectively), and similar cost-benefits per patient of $1162.80, $1188.73 and $1178.98, respectively, assuming that all RACC patients would have otherwise been admitted.

Conclusions: This study shows that a RACC model of care is cost-beneficial in the state of NSW as an alternative to inpatient care for managing chest pain. Scaling up to a national level could represent an even larger benefit for the Australian health system, but further research is required.

Rate Pressure Product Versus Age Predicted Maximum Heart Rate as Predictors Of Cardiovascular Events in Intermediate Risk Patients During Exercise Stress Echocardiography

M. Whitman 1,2,3,∗, C. Jenkins 1, S. Sabapathy 2,4, L. Adams 2,4

1 Logan Hospital, Yatala, Australia
2 Menzies Health Institute, Gold Coast, Australia
3 University of Queensland, Brisbane, Australia
4 Griffith University, Gold Coast, Australia

Background: Exercise stress echocardiograms (ESE) are a functional cardiovascular (CV) test typically used for the investigation of coronary artery disease (CAD). ESEs are often terminated at a pre-determined age-predicted maximum heart rate (APMHR) to facilitate timely acquisition of ultrasound images at peak exercise. While an APMHR of 85% is often used, this has not been validated as a suitable termination endpoint. Rate pressure product (RPP) as an established measure of myocardial work may provide a more reliable assessment of cardiac workload. The aim of this study was to assess maximal RPP (MRPP) and APMHR as markers of cardiac workload during ESE, using CV events during follow-up as the outcome variable.

Methods: Following exclusions, 715 patients being investigated for ischaemic heart disease, performed an ESE to volitional fatigue using the standard Bruce protocol. Patient demographics and test data were collected and patients followed up (4.4 ± 2.1 years) by reference to medical records or contact with the patients’ general practitioners.

Results: From receiver operating characteristic analyses, MRPP (cut point 25060) (AUC 0.725) outperformed APMHR (cut point 99.4%) (AUC 0.605) (p = 0.009 for difference) as a predictor of CV events during follow-up. Furthermore, those achieving an APMHR >85% but MRPP <25060 had significantly more CV events than achieving an MRPP >25060 regardless of APMHR (p < 0.05).

Conclusion: The current study demonstrates the superior prognostic power of RPP over APMHR alone for the prediction of future CV events in patients performing an ESE for the detection of CAD.

http://dx.doi.org/10.1016/j.hlc.2019.06.418

http://dx.doi.org/10.1016/j.hlc.2019.06.419