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Spatial variation of cardiovascular disease risk in Australian Communities: an approach to better targeting preventive interventions

Introduction

Cardiovascular disease (CVD) continues to be a leading cause of morbidity and mortality among adults worldwide. The objective of this study was to calculate a CVD risk score from General Practice (GP) data and assess spatial variations of CVD risk in Australian communities.

Methods

We used GP data for 4,740 men and women aged 30 to 74 years with no history of CVD. A 10-year absolute CVD risk score was calculated based on the Framingham Risk Equations. The individual risk scores were aggregated within each Statistical Area Level One (SA1) to predict the level of CVD risk in that area. Finally the pattern of CVD risk was visualised to highlight communities with high and low risk of CVD.

Results

The overall ten year risk of CVD in our sample population was 14.6% (95% CI 14.3 -14.9). Of the 4,740 patients in our study, 26.7% were at high risk, 29.8% were at moderate risk and 43.5% were at low risk for CVD over ten years. The proportion of individuals at high risk of CVD risk was significantly higher in the communities with lower socio-economic status.

Conclusion

The approach taken in this study provides an opportunity for researchers to further explore prevalence, location and correlates of CVD. This study illustrates a methodology which can be used as a tool to identify communities of high levels of unmet need for cardiovascular care and enable geographic targeting of effective preventing interventions for enhancing early and timely detection and management of cardiovascular diseases in those communities.

Spatial Epidemiology

Chronic Disease

Spatial Analysis