

Risk factors for myocardial infarction and stroke in Africa

Student: Carien Lawrence

Supervisor: Prof J Volmink

Background: Definitive information on the strength of association between various risk factors and cardiovascular disease in Africa is lacking.

Objective: We conducted a systematic review of studies investigating risk factors for acute myocardial infarction (AMI) and stroke in Africa.

Data sources: We searched Medline and Embase as well as the reference lists of the included articles. Study eligibility criteria: We included case-control and cohort studies conducted in an African country, which assessed risk factors for first episodes of (AMI) or stroke in people of any age.

Methods: Two independent reviewers screened studies for eligibility, extracted data and assessed study quality. We described measures of association (odds ratios) with confidence intervals of risk factors for AMI and stroke separately.

Results: Twelve articles reporting results from five case-control studies met our inclusion

criteria but only one study (INTERHEART) investigated risk factors for AMI. No eligible cohort studies were identified. The direction of association for established risk factors for AMI and stroke seem to be similar globally but the strength of association of various risk factors varies between countries and within African ethnic groups. In Africa, diabetes and hypertension had the highest risk associated with AMI and hypertension was the strongest risk factor for stroke. Overall, the quality of the included case-control studies was good.

Conclusions and implications: Our results confirm the urgent need for prospective studies investigating risk factors for AMI and stroke in African populations. A few high-quality case-control studies exist but these do not adequately represent the cultural and genetic diversity in Africa, or the influence of infections on cardiovascular outcomes. Dynamic risk factors that rely on self-report such as diet, physical activity and stress will be better assessed through longitudinal cohort studies.