Commentary

The missing ethnicity in primary cardiovascular trials

Success is going from failure to failure without a loss of enthusiasm

Winston Churchill (1874–1965)
British politician and statesman

Cardiovascular disease (CVD) is the most common and one of the most preventable causes of death worldwide. The incident risk of stroke, myocardial infarction and peripheral vascular disease vary among ethnic groups. For example, individuals with African or Caribbean background have a high incidence of stroke and end-stage renal failure compared with Caucasians. On the other hand, South Asians have higher incidence of CVD.1,2 The recently published guidelines for the primary stroke prevention highlighted the increased age-adjusted prevalence of stroke in Asian (1.8%/100 000), Blacks (4.6%/100 000) and Hispanics (1.9%/100 000) compared with whites.3 The underlying causes of these disparities are not well understood. Differences in dietary and genetic factors, prevalence of hypertension, diabetes, or dyslipidemia and the response to preventative treatment are some commonly attributed determinants.3

More interestingly, the Framingham score may underestimate the 10-year risk of CVD in some ethnic groups (e.g. South-Asians), as the data (over 20 years old) are mostly derived from Caucasians middle class North American population with limited ethnic representation or individuals from low socioeconomic subgroups.4,5

A systematic review of ethnicity in primary prevention trials of CVD

In this issue of QJM, Minocher Homji et al.6 conducted a systematic review that aims at identifying the proportion of immigrants and different ethnic groups reported in randomized clinical trial (RCTs) in primary cardiovascular prevention. Data sources included MEDLINE, EMBASE and Cochrane databases between 1980 and December 2009. Selection criteria also include studies with at least 100 participants. Among 44 RCTs that met the inclusion criteria, 10 [22.2%, 95% confidence interval (CI) 12.4–36.5] included and/or reported on the ethnic status of the participants (n=130 969). Overall, the weighted proportion of non-white participants was 10.7% (95% CI 6.9–16.2), whereas Asian or Asian Pacific ancestry comprised 2.2% (95% CI 1.1–4.7) in the four trials that reported the ethnic background. Interestingly, no study analyzed the efficacy of the intervention stratified by ethnicity, and none reported on the number of participants who were immigrants.

What have we learned from this study?

The risk of myocardial infarction, stroke and peripheral vascular disease vary among different ethnic groups. As known, the efficacy of different therapeutic alternatives differs among Caucasians, Blacks, Hispanics, African-Americans, South-Asians, etc. For example, the Anglo-Scandinavian Cardiac Outcomes Trial (ASCOT-BPLA) analyzed the effect of adding thiazide or perindopril to unchanged monotherapy (atenolol or amlodipine). Blood pressure levels in Black (n=203) patients were significantly less responsive (mean systolic difference +1.7 mmHg) compared with White patients of European countries (n=4368).7 Similarly, heart failure was significantly more common among Black than non-Black hypertensive patients (hazard ratio 2.30, 95% CI 1.24–4.28).8,9 Therefore, it is important to clearly describe the population target by also including the ethnic background in randomized clinical trials in CVD and cerebrovascular disease.

The authors also argue that recent immigrants may differ from native born in dietary practices, and lower incident risk of vascular risk factors such as hypertension. The so-called ‘healthy immigrant effect’ may also affect the results of interventional trials. This may be an issue considering the lower expected absolute risk reduction due to the high pre-recruitment prevalence (and efficacy) of participants on combined antithrombotic,
antihypertensive and lipid-lowering therapy in cardiovascular trials.

Limitations to this study (and acknowledged by the authors) include publications only in the English literature. Publication bias, common to all systematic reviews, cannot be ruled out. Nevertheless, major trials in cardiovascular prevention have been included, and the potential exclusion of studies (likely smaller) published in other languages than English or non-indexed journals are unlikely to change these results.

In the future, clinicians, readers, policymakers and editors should be aware of the scope of the trial and the specific efficacy of the interventions in primary and secondary cardiovascular prevention across ethnic groups.

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