Abstract

BACKGROUND: Cholesterol levels in many Asian countries are rising. Predictions of the likely effects of this on the incidence of cardiovascular diseases have mostly relied on data from Western populations. Whether the associations between total cholesterol and cardiovascular diseases are similar in Asia is not established.

METHODS: The Asia Pacific Cohort Studies Collaboration (APCSC) is an individual-participant data meta-analysis of prospective studies from the Asia-Pacific region. Cox models were applied to the combined data from 29 cohorts to estimate the region-, sex-, and age-specific hazard ratios of major cardiovascular diseases by the fifths of total cholesterol.

RESULTS: At baseline, the age/sex-adjusted mean value of total cholesterol was higher in Australia and New Zealand (ANZ) (5.52 +/- 1.05 mmol/l) than in Asia (4.87 +/- 1.05 mmol/l). During 2 million person-years of follow-up among 352 033 individuals, 4841 cardiovascular deaths were recorded. The association of total cholesterol with coronary heart disease and stroke was similar in Asian and ANZ cohorts. Overall, each 1-mmol/l higher level of total cholesterol was associated with 35% (95% CI: 26-44%) increased risk of coronary death, 25% (95% CI: 13-40%) increased risk of fatal or non-fatal ischaemic stroke, and 20% (95% CI: 8-30%) decreased risk of fatal haemorrhagic stroke.

CONCLUSIONS: In both Asian and non-Asian populations in the Asia-Pacific region, total cholesterol is similarly strongly associated with the risk of CHD and ischaemic, but not haemorrhagic, stroke. Rising population-wide levels of cholesterol would be expected to contribute to a substantial increase in the overall burden of cardiovascular diseases in this region.