**Rational**

Epidemiological studies have reported inconsistent findings about the association between lipids and premature cardiovascular mortality.(Di Angelantonio et al. 2009; Lewington et al. 2007) The Prospective Studies Collaboration reported a lower hazard of death due to ischaemic heart disease for each 1 mmol/L reduction of total cholesterol.(Lewington et al. 2007) However, the evidence of an association between serum lipids and cerebrovascular disease mortality was less consistent in their study.(Lewington et al. 2007) Furthermore, the Emerging Risk Factor Collaboration revealed a higher hazard of death due to coronary heart diseases for people with increased cholesterol and LDL-cholesterol levels and those with decreased HDL-cholesterol.(Di Angelantonio et al. 2009) Again, the evidence was less conclusive when the main outcome was ischaemic stroke mortality.(Di Angelantonio et al. 2009) Other independent prospective studies have reported that the association between total cholesterol and stroke mortality varies according to stroke sub-type.(Yi et al. 2018) Moreover, a study including people aged 60 years and above reported a reduced mortality between increased serum total cholesterol and all-cause mortality, most likely due to a high number of non-cardiovascular deaths;(Liang et al. 2017) similarly, LDL-cholesterol seems to have an negative correlation with mortality in people 60 years old and above.(Ravnskov et al. 2016) Whether these observations hold in populations with different distribution of cholesterol, health profiles and access to healthcare,(Atun et al. 2015; Cotlear et al. 2015; Farzadfar et al. 2011) deserves verification.

It must be kept in mind that the current scientific evidence on the association between serum lipids and mortality is derived mostly from Western populations. Therefore, summarizing studies on the association between lipid biomarkers and mortality in LA populations may provide valuable information for the development of local guidelines for clinicians and health policy makers. The objective of this study was to synthetize, through a systematic review, the current scientific evidence on the association between serum lipids and premature mortality in LA.

**Contribution**

This systematic review of the literature in LA did not reveal scientific evidence on an association between unfavourable serum lipid biomarkers and premature mortality in the general population. Furthermore, the definitions used to categorize lipid biomarkers were inconsistent across reports. In addition, only one study was conducted within the last ten years. Overall, our findings call to either conduct new cohort studies or use available ones to systematically estimate the mortality risk associated with lipid profiles, using consistent metrics and clinically relevant definitions. Thus, there is a need to study the long-term effects of lipid profiles as this will provide evidence to inform local clinical practice, health policy and priority setting for LA.

To date, it is not possible to ascertain the association between lipid biomarkers and mortality risk in LA. The available evidence is outdated, and the definitions of lipid biomarkers are inconsistent. In addition, different methods were used to measure the long-term mortality risk in LA populations. These findings strongly suggest conducting larger studies within the LA population to get valuable risk estimates of the associations between serum lipids and premature mortality

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