AW TAR CHOON
Changi General HospItal,
Singapore

The emerging role of Lp(a) in the management of dyslipidemias

Abstract:

Lipoprotein(a) [Lp(a)] is a molecule bound to apolipoprotein(a) [apo(a)] with some similarity to low-density lipoprotein cholesterol, an established cardiovascular disease (CVD) risk factor. Lp(a) appears to induce inflammation, atherogenesis, and athero-thrombosis. Lp(a) levels are determined predominantly by genetics influencing the number of kringle-IV (K-IV) repeats in its encoded apo(a). A greater number of K-IV repeats leads to a larger apo(a) with consequent protein trapping within hepatocytes, decreased hepatic secretion of apo(a) and lower Lp(a) levels. Since Lp(a) isoform size heterogeneity influences its concentration, Lp(a) methods which are isoform neutral and provides measurements in molar units are preferred over mass units. Undesirable Lp(a) maybe present in 20% of the population. Current management of dyslipidemia is ineffective in lowering Lp(a). Emerging RNA-based therapeutics – antisense- oligonucleotide (pelacarsen) and small interfering RNA (Olpasiran) - are able to reduce Lp(a). Ongoing Phase III trials are evaluating their efficacy in the secondary prevention of major cardiovascular events (MACE) in patients with elevated Lp(a). Notrably, the recent Mass General-Brigham Lp(a) Registry study (>16000 adults followed up for over 11 years) showed increased ASCVD (MI and coronary revascularization) when Lp(a) exceeds >112 nmol/L (>53 mg/dL) among individuals with a history of prior ASCVD; But there was no association between elevated Lp(a) and ischemic stroke or cardiovascular death. However, among individuals without a history of ASCVD, a higher Lp(a) threshold (>216 nmol/L) was observed for all MACE (MI, coronary revascularization, stroke, and CV death). In future residual cardiovascular risk reduction may require individualizing management with regards to Lp(a).

Biography

Dr Aw Tar Choon is a Senior Consultant with the Department of Laboratory Medicine at Changi General Hospital (CGH) since 2006. He is also the director of Chemical Pathology and a clinical senior.