Ratio of total cholesterol over HDL is a better hyperlipidemia indicator for sensorineural hearing loss?

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Introduction. Sensorineural hearing loss (SNHL) have been attributed to hyperlipidaemia by postulated mechanisms such as atherosclerosis, metabolic, ageing and even hypertension. However, current researches showed that the assessment of low density lipoprotein (LDL) or total cholesterol alone may not be sufficient to identify an individual at risk for the various mechanisms mentioned above. In fact, in the 26-year follow-up of the Framingham study, 20 % of patients with myocardial infarctions had their cholesterol level below 5.17 mmol/L, a level considered safe according to most guidelines. The present study was undertaken to see the relationship of SNHL and the various lipid profiles.

Methods. This is a cross sectional study where patients were recruited from those attending the Otorhinolaryngology clinic at Tengku Ampuan Afzan Hospital, Malaysia with SNHL, which was confirmed via the pure tone audiometry. Patients who suffered hearing loss secondary to trauma, suppurative otitis media and tumor within the cerebellopontine angle region are excluded from this study. All the subjects were required to fast for at least 12 hours before antecubital venous blood was taken for lipid profile determination.

Results. Subjects with SNHL have significantly lower level of HDL (1.23 ± 0.47 vs 1.82 ± 0.60 mmol/L, $P < 0.01$) and higher level of triglyceride (1.32 ± 0.83 vs 0.91 ± 0.93 mmol/L, $P < 0.01$) and TC:HDL (4.21 ± 1.51 vs 3.01 ± 1.07) as compared to control. Surprisingly, there were no significant difference in total cholesterol level and LDL level between groups.

Conclusion. The study suggested that the TC:HDL ratio may be a more useful marker in detecting subject with high risk of developing SNHL.