

## **Cardiac ischaemia and left ventricular hypertrophy (LVH) in electrocardiographs (ECGs) and their correlates among Sri Lankan adults**

Caldera, TSKRD; Liyanage, IK; Herath, HRIS; Constantine, GR; Sheriff, MHR; Matthews, DR; Katulanda, P

### **Abstract :**

**Objectives:** ECG changes and their correlates have not been previously studied among Sri Lankan adults. We aimed to analyse ischaemic changes and LVH and to determine the association between glucose tolerance status, hypertension and metabolic syndrome.

**Methods:** A nationally representative sample of 4456 adults was recruited by a multi-stage stratified random cluster sampling method. Data from a structured interview, medical examination and investigations including OGTT, FBS and 12-lead ECG were available and were analysed using SPSS. ECGs were coded according to the Minnesota code by a cardiologist.

**Results:** ECGs were taken from 4456 individuals. Ischaemic changes were seen in 9.6% of the total population and were significantly higher ( $p < 0.001$ ) among people with prediabetes (12.4%), diabetes (14.1%), central obesity (11.5%), hypertension (13.2%) and metabolic syndrome (12.43%) compared to others ( $p < 0.001$  for all correlates). Atrial fibrillation was seen in 0.1% of individuals while Left Bundle Branch Block (LBBB) was seen among 0.5% and LVH among 4.3% of the study population. Having diabetes did not significantly increase the incidence of atrial fibrillation, ventricular ectopics or LBBB ( $p = ns$ ). Ischaemic changes were more prevalent among the physically inactive compared to the moderately active and sufficiently active ( $p < 0.05$ ). Changes suggestive of LVH was significantly higher ( $p < 0.05$ ) among people with hypertension, central obesity and metabolic syndrome but not among people with diabetes.

**Conclusions:** Prediabetes, diabetes, central obesity and metabolic syndrome increased the risk of having ischaemic changes in ECG. Hypertension, metabolic syndrome and central obesity were significantly associated with LVH.