

## **Prevalence and phenotype characteristics of latent autoimmune diabetes in adulthood (LADA) and type 1 diabetes among young adults in Sri Lanka**

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### **Abstract:**

**Background:** Sri Lankans are at high risk of diabetes. Knowledge of the aetiology is useful in disease prevention.

**Objectives:** To determine the prevalence and clinico-metabolic characteristics of Glutamic Acid Decarboxylase Antibody (GAD) positive diabetes among young adult-onset subjects in Sri Lanka.

**Design, setting and methods:** We recruited a sample of 1007 consecutive diabetic subjects 45 years (age of diagnosis 16 to 40 years). Clinical and metabolic characterization was performed. GAD antibodies were measured using a radioimmunoassay method. A titre  $>14\text{U/L}$  (WHO 97.5 percentile) was considered positive. LADA was diagnosed when subjects were GAD+ve,  $>30$  years and insulin independent  $>6$  months from diagnosis. Insulin resistance assessed using homeostatic model (HOMA-IR). Data were analysed using SPSS.

**Results:** Mean age of the cohort was 36.7 years ( $\pm 5.8$ ), males 42.3%. Overall 16% were insulin treated. GAD was positive in 5.4% ( $n=54$ ) of our sample. The GAD titre had a significant negative correlation with the time of commencement of insulin ( $r=-0.22$ ,  $p=0.006$ ). The GAD+ve type 1 diabetes (T1DM) and LADA were 2.1% and 2.6% respectively. Among subjects with T1DM, LADA and type 2 diabetes (T2DM), BMI ( $\text{kg/m}^2$ ) [19.6, 22.2 and 25.0], fasting C-peptide ( $\text{nmol/l}$ ) [0.08, 0.52 and 0.65] and HOMAIR [0.28, 2.0 and 1.75] showed significant differences ( $p<0.001$ ). Metabolic syndrome was present in 0%, 46% and 67.3% of the T1DM, LADA and T2DM subjects respectively ( $p<0.001$ ).

**Conclusions:** GAD positive diabetes is less prevalent among young adult diabetic subjects in Sri Lanka compared to T2DM. Subjects with LADA are phenotypically more related to T2DM than to T1DM.