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PEDIGREE ANALYSIS OF TYPE 2 DIABETES MELLITUS INHERITANCE PATTERN IN PATIENTS ATTENDING DIABETIC CLINIC, NATIONAL HOSPITAL, KANDY, SRI LANKA

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Diabetes mellitus (DM) is a major cause of morbidity and mortality with approximately 422 million people living with DM worldwide and the prevalence of DM in Sri Lankan adults (20 - 79 years) is 10.3%. The objective of this study was to demonstrate the inheritance pattern of type 2 diabetes mellitus (T2DM) using pedigree analysis in a selected cohort of T2DM patients in Sri Lanka. This is a prospective cross-sectional study conducted from May – July 2016 at diabetic clinic, National Hospital, Kandy, Sri Lanka. Patients attending the Diabetic and Endocrinology unit, diagnosed with T2DM according to the World Health Organisation guidelines and volunteered to participate were enrolled in the study. Family history and demographic data were collected from 120 T2DM patients using a standardized questionnaire and pedigree was constructed for each proband. Forty-four (44) male patients and 76 female patients participated in the study. The DM history ranged from one month to 30 years and the DM onset age was found to be 24 - 76 years. Out of the 120 T2DM patients, 16 patients had both parents affected with DM and 44 patients showed that neither father nor mother was affected with DM. Of the 1523 family members of the 120 T2DM patients, 506 direct family members were found to have DM. In the study population, female progeny was more prone to have diabetic (χ^2 = 2.379, p = 0.0173) than male progeny when mother is diabetic. Though it is not statistically significant, we have also observed that female progeny is more prone to have diabetes when both the parents were diabetic (χ^2 = 0.9556, p = 0.3393). This study shows a multifactorial inheritance pattern of T2DM in our study population. As the number of T2DM patients increase in Sri Lanka, more studies are warranted in a large patient population to better understand the genetic linkage and influence of other environmental factors on the disease onset.

Keywords: Diabetes, Inheritance pattern, Pedigree analysis, T2DM