

## **Risk determinants of peripheral neuropathy in patients with Type II diabetes mellitus attending follow-Up clinics at University Kebangsaan Malaysia Medical Center (UKMMC): a cross sectional study**

### **ABSTRACT**

Peripheral neuropathy is highly associated with foot complications among diabetics. This study aimed to identify risk factors associated with the development of peripheral neuropathy in diabetic patients and their association with degree of severity of peripheral neuropathy. A cross-sectional study was conducted in follow-up clinics at the Universiti Kebangsaan Malaysia Medical Centre (UKMMC), Malaysia involving 72 diabetic patients and 19 controls. Exclusion criteria were those with amputated limbs, gross foot deformity and existing peripheral neuropathy. Controls were non diabetics who walked normally, had no history of foot problem and attended the clinic as subjects' companion. Quantitative assessment of neuropathy was done using Semmes-Weinstein monofilament. Neuropathy Disability Score (NDS) were used to quantify severity of diabetic neuropathy. Spearman's Rank test and Mann-Whitney test were used to determine correlation between variables and their differences. Logistic regression analysis was used to determine risk factors associated with peripheral neuropathy. The mean HbA1c among diabetics was 8.6% + 4.1, and mean NDS was 7.0 + 6.0. A total of 79.1% demonstrated various level of neuropathy with presence of callus was associated with higher NDS scores. Older age ( $P=0.02$ ), body weight ( $P=0.03$ ), HbA1c ( $P=0.005$ ) and duration of diabetes ( $P < 0.005$ ) showed positive correlation with NDS. Proper foot care program for diabetics should include recognition of the callus, with special emphasis given to those with heavier weight and increasing age.

**Keyword:** Callus; Diabetes mellitus; Neuropathy Disability Score (NDS); Peripheral neuropathy; Semmes Weinstein monofilament (SWMF)