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Prevalence and Determinants of Peripheral Neuropathy Among Adult Type II Diabetes Mellitus Patients Attending a Non-communicable Disease Clinic in Rural South India

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Case Study

Background : Diabetic peripheral neuropathy (DPN) is one of the most common microvascular complications of diabetes. Almost half of the diabetic patients develop foot ulcer as a complication of DPN during their lifetime. The aim was to estimate the prevalence and identify the risk factors of diabetic peripheral neuropathy among adult diabetes mellitus (DM) patients.

Methods : A cross-sectional study was conducted among 421 type 2 DM patients attending Non-Communicable Disease (NCD) clinic in rural Puducherry through systematic random sampling. The study instruments used for data collection were a pre-tested semi-structured questionnaire, Michigan Neuropathy Screening Instrument (MNSI), Morisky Green Levine Scale (MGLS), physical measurements and recent laboratory results. The data was captured using Epicollect5 and analyzed using SPSS version 20.

Results : The prevalence of DPN was 31.1% (95% confidence interval (CI): 27.1%-35.1%). The mean age, duration of diabetes, and duration of foot symptoms were 57.91±10.61, 7.00±6.23, 5.56±5.26 years. Smoking (adjusted odds ratio (AOR) 3.14; 95% CI 1.73-5.69), mean duration of diabetes>5years (AOR 2.74; 95% CI 1.71-4.40), hyperglycemic status(>200mg/dl) (AOR 2.24; 95% CI 1.08-4.64) and unemployment (AOR 2.05; 95% CI 1.11-3.76) were found to be statistically significant determinants of DPN on binary logistic regression analysis.
Conclusions

A considerable proportion of diabetics are at risk of developing DPN among rural DM patients. More diligent screening in a primary health care setting and addressing the modifiable risk factors like smoking, obesity, physical inactivity, and uncontrolled hyperglycemia will delay or hamper DPN development among diabetic patients.