

Validation of bedside methods in evaluation of diabetic peripheral neuropathy.

[Javaprakash P¹](#), [Bhansali A](#), [Bhansali S](#), [Dutta P](#), [Anantharaman R](#), [Shanmuugasundar G](#), [Ravikiran M](#).

Author information

Abstract

BACKGROUND & OBJECTIVES:

Vibration perception threshold (VPT) is considered as a gold standard for diagnosis of diabetic peripheral neuropathy. However, the data are sparse comparing the VPT with commonly used bedside modalities. This study was carried out to evaluate the usefulness of simple bed side screening modalities for peripheral neuropathy in patients with diabetes mellitus.

METHODS:

A total of 1044 patients with diabetes mellitus attending the Diabetes clinic from January 2007 to May 2008, were included in this study. All subjects had a detailed clinical assessment including Diabetic Neuropathy Symptom (DNS) score, Diabetic Neuropathy Examination (DNE) score, ankle reflex, vibration sensation with a 128 Hz tuning fork, 10 g Semmes-Weinstein monofilament and vibration perception threshold (VPT).

RESULTS:

The prevalence of peripheral neuropathy was 34.9 per cent with VPT. Foot care practices were followed by only 214 (20.5%) of the study population. When compared with VPT, ankle reflex was the most sensitive (90.7%) but least specific (37.3%). The tuning fork and monofilament tests respectively had lower sensitivity (62.5 and 62.8%) but better specificity (95.3 and 92.9%) and accuracy (78.9 and 77.9%). Significant correlations were observed between the VPT score and the DNE ($r = 0.532$, $P < 0.001$) and DNS ($r = 0.546$, $P < 0.001$) scores and absent tuning fork sensation ($r = 0.590$; $P < 0.001$), monofilament sensation ($r = 0.573$; $P < 0.001$) and ankle reflex ($r = 0.377$, $P = 0.01$).

INTERPRETATION & CONCLUSIONS:

The present findings show that simple bed side tests are useful for assessing peripheral diabetic neuropathy, even in those subjects in whom foot care practices are not followed.