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Prevalence of neuropathic pain among patients according to the updated grading system and new questionnaires' cut-offs

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Abstract

Introduction: Neuropathic pain (NP) is characterized by intense symptoms, a longer prognosis, and different management strategies when compared to other pain presentations. Early diagnosis of NP follows the International Association for the Study of Pain (IASP) grading system, which classifies NP likelihood as "possible", "probable", and "definite". Several tools have been developed and described in the literature to aid the process of diagnosing NP, such as the Leeds Assessment of Neuropathic Symptoms and Signs (LANSS), and painDETECT. However, it is still unclear when and how these tools should help clinicians to assess patients presenting with features of NP. This work aimed to determine the prevalence of NP pain among patients who present to a private clinic, assess the accuracy of LANSS and painDETECT compared to the updated IASP grading system.

Methods: Consecutive patients presenting to two private clinics from July 2018 to December 2019 were assessed by a medical doctor according to the updated IASP grading system for NP. Two blinded physiotherapists collected demographic data, questionnaires' scores (i.e., LANSS, painDETECT), and clinical variables (e.g., quality of life). Received Operating Characteristics (ROC) and Areas Under the Curve (AUC) were used to compare the performance of questionnaires and the IASP grading system, and to suggest new cut-off scores.

Results: Of 204 patients 50.5% was classified as unlikely, 40.2% as probable, and 9.3% as definite NP. Comparisons among possible, probable, and definite NP groups showed significant ($p<.001$) differences in pain intensity, questionnaires' scores, and the Mental Component Scale (MCS) of the Short-Form. Both questionnaires showed a higher agreement with the updated IASP grading system for unlikely (LANSS: 84.5%; painDETECT: 86.4%) than for probable and definite NP (LANSS: 41.6%; painDETECT: 22.8%). New suggested cut-off scores were 5 (sensitivity = 0.95) and 21 (specificity = 0.99) for LANSS, and 5 (sensitivity = 0.95) and 19 (specificity = 0.95) for painDETECT. Both questionnaires correlated significantly with pain intensity (LANSS: $r = 0.364$; painDETECT: $r = 0.423$).

Conclusions: The prevalence of definite NP according to the updated IASP grading system resulted in line with existing evidence. However, a large group of patients still lacked any form of certainty about their pain phenotype. Looking at the results of the study, patients in doubt could be addressed by using painDETECT new cut-off scores of 16 or higher to confirm NP (specificity = 0.95), and 10 or lower to exclude NP (sensitivity = 0.89). LANSS new cut-off scores could be 16 or higher (specificity = 0.90), and 7 or lower (sensitivity = 0.89).

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