Patient-completed screening tools have poor diagnostic accuracy for neuropathic orofacial pain in a hospital-based cohort

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Introduction

Diagnosis of orofacial pain (OFP) syndromes is complex due to dental and non-dental overlap and simultaneous manifestations in one patient.

The **Oregon Health and Science University questionnaire (OHSU)** is a 22-question tool used to recognise orofacial pain syndromes (McCartney et al. 2014). The **PainDETECT questionnaire (PD-Q**) scores patients on their likelihood of having neuropathic pain components (Freynhagen et al. 2006).

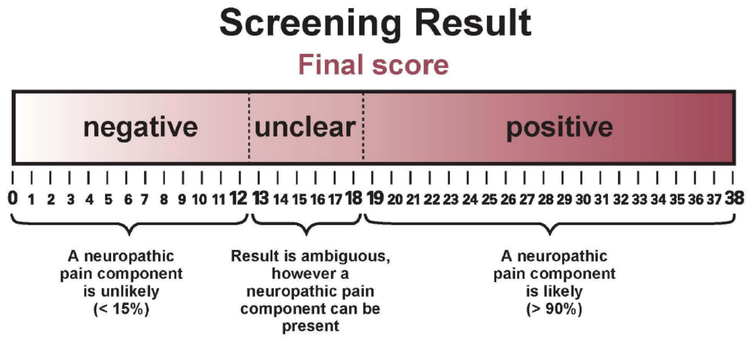

Figure 1 | Scoring and screening result of the PD-Q.

Aim

We aimed to determine and compare the diagnostic accuracy of the OHSU and PD-Q for recognition of OFP in a hospital based cohort.

Methods

A prospective diagnostic study was conducted at a Facial Pain academic unit in London, United Kingdom. After referral, and prior to their first appointment, patients were assigned either the OHSU or the PD-Q to complete.

The primary outcome was the accuracy of each screening tool for recognising OFP syndromes. The secondary outcome was the factors associated with diagnostic accuracy.

Results

OHSU

	Prevalence	Sensitivity	Specificity	PPV	NPV
TN	32%	84% (69-93)	59% (48-69)	49% (37-60)	89% (78-95)
TMD	32%	48% (33-63)	86% (78-93)	62% (44-78)	78% (69-86)
TNP	8%	27% (6-61)	95% (90-98)	33% (7-70)	94% (88-97)

Table 1 | Diagnostic accuracy of the OHSU. 88 of 139 (63%) patients were correctly diagnosed by the OHSU. The diagnostic accuracy of the OHSU is presented for the three most common diagnoses in at our centre. TN, trigeminal neuralgia; TMD, temporomandibular disorder, TNP; trigeminal neuropathic pain. **A dual diagnosis was associated with a misdiagnosis by the OHSU.**

PD-Q

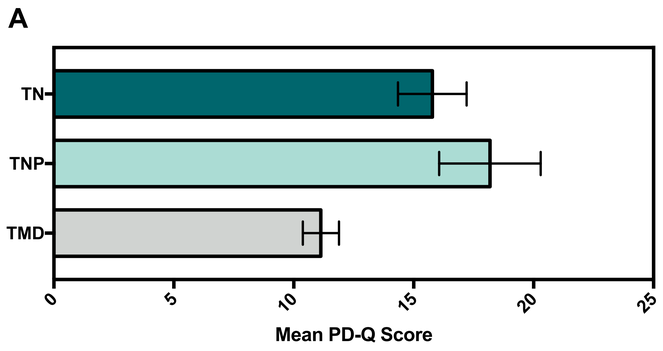

Figure 2 | PD-Q scores for clinical diagnoses. 172 of 251 (69%) patients were correctly diagnosed by the PD-Q. Using a Kruskal-Wallis test, PD-Q scores were not significantly different between groups when adjusted for pairwise comparisons. **Dual diagnosis was associated with poorer diagnosis of the PD-Q.**

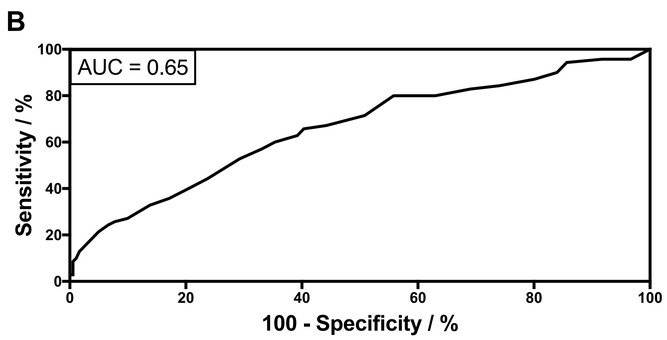

Figure 3 | Receiver operating characteristics (ROC) of the PD-Q. The area under the curve (AUC) for the PD-Q was 0.65.

Summary

The is the first prospective study comparing diagnostic accuracy of patient-completed screening tools for OFP. These have a low diagnostic accuracy, underestimating the complexity of OFP. Tools must be revalidated in appropriate target populations prior to clinical use.

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References

Freynhagen, R., Baron, R., Gockel, U., Tölle, T. R. (2006). Curr Med Res Opin. 22, 1911-1920.

McCartney, S., Weltin, M., Burchiel, K. J. (2014). 92, 44-52.