Letter to Editor

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Anaesthesia Section

Challenges in using Symptoms Based Screening Tools while Assessing Neuropathic Pain Component in Patients with Chronic Low Back Pain

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Dear Sir,

Back Pain (BP) is the commonest reported pain condition. It can present with nociceptive, neuropathic or both pain components [1]. Fishbain et al., reported the prevalence of neuropathic pain (NP) in patients with chronic low back pain (CLBP) to be 37% [1]. NP is the "Pain caused by a lesion of somatosensory nervous system (IASP) [2]". Nociceptive Pain (NcP) is the "Pain that arises from actual or threatened damage to non-neural tissue and is due to the activation of nociceptors (IASP) [2]". NP is associated with more intense pain, more severe disability and worse quality of life [3]. Accurate recognition of NP is essential as it is understood that pain must be managed in a mechanism-orientated way and not solely on intensity basis to achieve desirable therapeutic results [3].

NP diagnosis remains a challenge as no standardized test exists to diagnose it. The definition is unclear and much debated. The usual assessment methods such as quantitative sensory testing (QST) are costly, time consuming and poorly correlated with disability [4].

The wide use of NP assessment screening questionnaires has emerged recently since past two decades. These include Neuropathic Pain Questionnaire (NPQ), ID Pain, painDETECT, Leeds Assessment of Neuropathic Symptoms and Signs (LANSS) scale, and Douleur Neuropathique en 4 Questions (DN4) [5]. These questionnaires have been used both for research and clinical practice. The questionnaires rely on either subject interview based questions or both interview based questions and physical examination tests for NP assessment. All the questionnaires are based on the differential presence of symptoms observed in patients with NP from NcP. Various symptoms pertaining to NP used in questionnaires include dysesthesia, shooting pain, burning, numbness, itching sensation, pain radiation and evoked pain due to light touch, pressure, rubbing and hot/cold perception. Though all of the questionnaires consist of the above said symptoms, they vary in the extent of responses to questions, scoring and mode of assessment [5] [Table/Fig-1].

NP assessment screening questionnaires seems a good option but their use in practice has several issues which have been the focus in this review. These issues have been observed by the authors in regular practice and research. Additional relevant existing literature has also been cited and possible solutions are also provided if any.

Neuropathic Pain in Origin or the Presence of Neuropathic Component in Addition to Nociceptive Pain?

Is it a correct option to categorize a Mixed Pain Syndrome (MPS) like CLBP to one category like NP or NcP? Instead, we suggest using a more cautious approach, i.e., presence or absence of NP component. This approach will not underestimate the more prevalent nociceptive component and may be predominant in CLBP patients. This approach also supports the mechanism of development of NP as untreated acute NcP may progress in future to NP in addition to NcP [6].

Questionnaires	ID Pain	NPQ	painDETECT	LANSS	DN4
Symptoms reported					
Pricking, tingling pins, needles	+	+	+	+	+
Electric shocks or shooting	+	+	+	+	+
Hot or burning	+	+	+	+	+
Numbness	+	+	+		+
Pain evoked by light touching	+	+	+	+	
Painful cold or freezing pain		+			+
Pain evoked by mild pressure			+		
Pain evoked by heat or cold			+		
Pain evoked by changes in weather		+			
Pain limited to joints	-				
Itching					+
Temporal patterns or temporal summation			+		
Radiation of pain			+		
Autonomic changes	+				
Physical examination					
Brush allodynia				+	+
Raised soft touch threshold					+
Raised pinprick threshold				+	+

[Table/Fig-1]: Tools for assessing neuropathic pain [5].
The plus (+) and minus (-) signs indicates items that increase and decrease the score respectively.

Do symptom based scales perform poorly in mixed pain conditions including CLBP?

Variable scale sensitivity is established in different pain conditions especially in MPS like CLBP [7]. Limited data is available comparing these scales with golden standard criteria of diagnosis (Clinician diagnosis) or IASP criteria for diagnosis of NP in MPS. While evaluating the validity of LANSS and DN4 in various pain conditions, Sadler et al., reported that both questionnaires underperform in MPS [8]. Moreover, during original development of these scales, MPS like CLBP were actually excluded. The validity and generalisability of these symptom based scales in MPS is thus questionable.

Do symptom based scales underperform in already treated/ partially treated patients with CLBP?

We would like to share our experience in pain clinic of a tertiary care hospital, where majority of the patients are referred from clinics like

orthopaedics, neurology, neurosurgery, general surgery and others. Patients with CLBP are already taking the medications targeting the typical symptoms of NP like numbness, tingling sensation and others, but still are referred to pain clinic because of persistent pain which might be due to complex mechanism involved. Now, if some of the typical NP symptoms of a patient subside, the diagnostic value of these scales becomes questionable. These tools are validated on the basis of verbal symptom descriptors with or without a limited clinical examination such as 'how the patient feels in past 4 weeks?' This can be sorted by using Treed's criteria (IASP criteria) where questions relating dermatomal distribution of pain and other symptoms along with diagnostic imaging are considered before deciding NP [9]. Inclusion of an additional question regarding responsiveness to antidepressants or antiepileptics in the scale can enhance the validity and may provide a solution to this issue especially in assessing partially treated MPS. However, formal studies are required to prove this assumption.

Do patients with Low Back Pain (LBP) with neuropathic component have different symptoms when compared to other neuropathic pain conditions?

While developing a new questionnaire, *Standardized Evaluation of Pain*, the authors concluded that the discriminative values of typical NP symptoms (cold pain, tactile hypoesthesia, tactile allodynia, etc) are low or even negative in patients with LBP [10]. Though, radicular pain in LBP is considered to have similar characteristics as any other NP syndrome [10]. This observation suggests that involvement of neuropathic component in LBP may have specific characteristics. Further studies are required to test this hypothesis.

Availability of Questionnaires in Limited Languages

Feasibility of administration of these questionnaires is of utmost importance for calculating the correct scores as these scales are either self or interviewer reported. Now-a-days translation, cross cultural adaption and validation studies of theses scales are at pace to use these scales in various countries. Still, a long journey needs to be made. In a country like India with its large population, cultural heterogeneity and high prevalence of NP, we do not have any symptom based scale in local language to assess NP. Similar problem has been cited in many developing and under developed countries researchers where large patient pools exist.

It is evident that symptom based screening tools fail to identify about 10–20% of patients with clinician-diagnosed NP in various pain conditions [6]. One must acknowledge that these screening tools cannot replace clinical judgment and their results should always be carefully interpreted.

Despite this discussion, limited options are available for treating NP component in patients with LBP. Further studies with methodological rigor need to be done to provide accurate diagnostic value of symptom based tools in patients with MPS like CLBP.

REFERENCES

[1] Fishbain DA, Cole B, Lewis JE, Gao J. What is the evidence that neuropathic pain is present in chronic low back pain and soft tissue syndromes? An evidence-based structured review. *Pain Med*. 2014;15(1):4-15.

[2] IASP Taxonomy [Internet]. [place unknown]: International Association for the Study of Pain; [date unknown] [cited 2015 July 21]. Available from http://www.iasp-pain.org/Taxonomy

[3] Morlion B. Pharmacotherapy of low back pain: targeting nociceptive and neuropathic pain components. *Curr Med Res Opin*. 2011;27(1):11-33.

[4] Cruz-Almeida Y, Fillingim RB. Can quantitative sensory testing move us closer to mechanism-based pain management? *Pain Med*. 2014;15(1):61-72.

[5] Cruccu G, Truini A. Tools for Assessing Neuropathic Pain. *PLoS Med*. 2009;6(4):e1000045.

[6] Hasenbring MI, Rusu AC, Turk DC. From Acute to Chronic Back Pain: Risk Factors, Mechanisms and Clinical Implications. Oxford: Oxford University Press; 2012.

[7] De Andrés J, Pérez-Cajaraville J, Lopez-Alarcón MD, López-Millán JM, Margarit C, Rodrigo-Royo MD, et al. Cultural adaptation and validation of the pain DETECT scale into Spanish. *Clin J Pain*. 2012;28(3):243-53.

[8] Sadler A, Wilson J, Colvin L. Acute and chronic neuropathic pain in the hospital setting: use of screening tools. *Clin J Pain*. 2013;29(6):507-11.

[9] Haanpää M, Attal N, Backonja M, Baron R, Bennett M, Bouhassira D, et al. Neu PSIG guidelines on neuropathic pain assessment. *Pain*. 2011;152(1):14-27.

[10] Scholz J, Mannion RJ, Hord DE, Griffin RS, Rawal B, Zheng H, et al. A novel tool for the assessment of pain: Validation in low back pain. *PLoS Med*. 2009;6(4):e1000047.

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