

# Management of chronic low back pain: news on the lumbar medial branch block and the importance of the biopsychosocial model

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Dear Editor,

One important source of low back pain (LBP) may be the facet joints (or zygapophyseal joints), mainly due to their inflammation, degenerative/arthritic changes, associated muscle disorders or repetitive injuries [1]. If there is a failure of the first line treatments (e.g., rest, analgesics and physical therapy), it is possible to perform a diagnostic infiltration: the lumbar medial branch block (LMBB). It consists of injecting local anaesthetics, sometimes with steroids, into the facet joint innervated by the medial branches of the posterior rami. If pain consecutively subsides, radiofrequency neurotomy can be performed with the aim of obtaining a more lasting result [2]. This technique produces a transient sensory block by heating of the innervating branches of the painful facet with rapidly oscillating current.

LMBB has been investigated over the years, and seems particularly interesting for the management of chronic LBP, with evidence of improvement of the Visual Analogue Pain Score, the Oswestry Disability Index and the Duke Activity Status Index scale [1, 3]. A recent prospective study showed that ultrasound (US)-guided LMBB performed in the transversal plane is as effective as fluoroscopy-guided LMBB (remaining the gold standard) and avoids the inherent irradiation [1].

In the same perspective of radiation protection, we are currently conducting a study at the Erasme Hospital (Belgium) (NCT05930236) to investigate the method described by Chang

*et al.* [4], where a US-guided LMBB is performed in a longitudinal plane, which has the advantage of requiring only one puncture point (instead of three). We aim to test the feasibility of US-guided LMBB in caudal-cranial orientation. This involves injecting a contrast agent, concurrently to usual medication, in the facet joint, thus making it possible to ensure the right position of the needle by checking it under fluoroscopy. Moreover, this technique would, in theory, be faster and therefore would limit prone decubitus, which is often uncomfortable in the case of LBP.

Nowadays, LBP remains a real physical, psychological, socio-economic and healthcare problem, affecting about 1 in 5 patients. The occurrence of chronic pain in as many as 45% of the cases is thought to be a result of peripheral and central sensitization, involving pathophysiological changes with dysregulation of the downward modulation of pain [5, 6]. The treatment of basic chronic LBP involves medication (analgesic/anti-inflammatory drugs), physiotherapy and management regarding the biopsychosocial model (BPS) [1].

The BPS is important for patients with chronic pain as a framework for implementing a multidisciplinary strategy. It is essential to discuss with the patient the different aspects of pain (sensory, emotional, cognitive and behavioural) in order to apply the necessary psychological and physical treatments. It focuses on the subjective aspects of pain resulting from

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tissue damage, stress, anxiety, depression, catastrophizing, fear, behaviour, sleep, beliefs, diet, postures, etc. In fact, a common belief of patients is that the importance of tissue damage in imaging is directly related to pain, but psychological problems are too often neglected or unrecognized. Hence, holistic management of chronic LBP, involving this model, is essential and helps to prevent vicious circles (e.g., sleep disturbance causing pain, which causes further sleep disturbance).

The BPS model, while being promising, in view of the heterogeneity of patients, must be adapted to each individual. This year, Van Dijk *et al.* [7] described obstacles and facilitators to be integrated into the care pathway approach (knowledge, skills, attitudes; context and environmental resources; role clarity; trust; therapeutic alliance and patient expectations). Further studies could possibly still assess the relevance of their integration into the healthcare system, rehabilitation programmes, etc. There are also many grey areas in the mechanism of pain chronification, the understanding of which could make it possible to improve target treatment.

Furthermore, as recommended by Kamper *et al.* [8], it is important to detect problems around the tissue damage itself in order to refer patients to appropriate multidisciplinary biopsychosocial rehabilitation interventions/programmes. Lastly, Cowell *et al.* [9] encourage medical and paramedical staff to allow patients to self-manage as much as possible. For that, the different constituents of the BPS model problems should be targeted and patients should be advised and trained appropriately to reduce the risk of accentuating pain and/or disabilities (e.g. to prefer certain physical positions in daily life according to their pain, etc.).

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