The Pivotal Importance of Preoperative Psychological Screening in the Low Back Pain Patient

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INTRODUCTION

In chronic pain syndromes, such as low back pain (LBP) and fibromyalgia, there is a high prevalence of emotional distress, including anxiety, depression, and hostility (27,15). People who suffer from chronic back pain may develop depressive symptoms, once they feel constant pain and crippling. Moreover, they are hindered in their professional, personal and social life, and also entail emotional damage. Given this precept, the prevalence of emotional problems is reported to be higher in people with disability conditions compared to healthy people (29).

Emotional, social and financial factors have been proven to influence the resolution of pain (9). These factors have been found to be relevant to various illness and have been prospectively evaluated for LBP surgical outcome (6). Screening those presurgical red flags may be performed to identify patients at risk for poor outcome.

Establishing the role of depression in chronic LBP is not simple due to the ambiguous cause and result relationship. Depressive mood may be caused or increased by pain and physical impairment; on the other hand, depression may also increase the existing pain and give rise to anxiety symptoms (16).

ABSTRACT

AIM: Emotional distress has been correlated with low back pain (LBP) and other chronic pain syndromes. The aim of this study was to describe psychosocial conditions associated with LBP in patients referred to surgery in a single center Brazilian cohort.

MATERIAL AND METHODS: Psychological evaluation was carried out in 143 patients during a preoperative visit. Depression and anxiety were rated by the HAD scale. VAS and ODI questionnaires assessed pain and physical restriction, respectively. Statistical analysis was used to identify the association between psychological distress and socioeconomic demographics and clinical factors.

RESULTS: In the current cohort, over one third of the patients demonstrated emotional distress. 33% had anxiety and 18% presented with depression. These conditions were statistically correlated to lower levels of education, higher VAS scores, psychosocial limitation, and also to inappropriate understanding of diagnosis and treatment. Furthermore, anxiety and depression levels were correlated.

CONCLUSIONS: The present report shows in a Brazilian sample that LBP is accompanied by pain and psychological disorders such as anxiety, depression and disability. Such findings corroborate previous reports in different LBP subsets from different nationalities, which support that identifying mood-distressed patients may help in clinical decision-making.

KEY WORDS: Anxiety, Depression, Low back pain, Lumbar spine, Psychology, Spine
The current study has the objective to describe psychosocial factors in chronic low back pain and search for possible associations in a group of patients with LBP referred for surgery in a single spine center.

METHODS

This cross-sectional study was conducted at a single spine surgery center in Brazil. Inclusion criteria were: clinical and radiographic diagnosis with LBP due to degenerative changes, with failed conservative treatment for at least three months, and surgical indication of lumbar arthrodesis. Exclusion criteria were: spine trauma or tumor, and refusing to attend preoperative psychological screening. In total, 143 subjects were finally selected.

During the psychological screening consultation, subjects were interviewed by a psychologist who collected various information and performed specific psychometric tests.

Among the sociodemographic items recorded were: gender; age; body mass index (BMI), classified into underweight (<18.5), normal weight (18.5-24.9), and obese (>25); presence or absence of co-morbidity; education level, classified into less than or equal to middle school, less than or equal to high school, or more than or equal to university; occupational status of economically active subjects, classified into active, inactive, or under litigation; marital status, classified into living with spouse or not; tobacco use; alcohol use; illegal drug use; psychological treatment; psychiatric treatment; use of prescription drugs; sleep disorder; and eating disorder. In addition to sociodemographic data, the psychologist rated the following factors: expectations from the surgery, classified into adequate or inadequate; physical limitation, classified into major, mild or minor; psychosocial limitation, classified into major, mild or minor. To estimate the levels of depression and anxiety, the Hospital Anxiety and Depression Scale (HADS), adapted to the subjects native language, was utilized. This scale has a two-factor structure: HADS-A and HADS-D, with seven questions relating to anxiety and seven to depression, respectively, and at a cut-off score of ≥8 to define the presence of the disorder. Self-reported pain was collected with the visual analogue scale (VAS), 14 and physical impairment was evaluated with the Oswestry disability index (ODI) (17).

Following the psychological interview, a conclusion was reached based on the general presentation of the case: “positive”, “review” or “negative”.

Distribution differences were examined with Fisher's exact test, means and standard deviations were examined with Student’s t test, and Pearson's correlation coefficient (r) was used to measure the strength of the association between the two variables. A p-value less than 0.05 was considered significant.

RESULTS

The levels of anxiety and depression were obtained using HADS and are shown in Figure 1. It was seen that over one-third (36%) of the patients had anxiety and/or depression, and anxiety levels were higher than those for depression (p<0.001). Linear regression between depression and anxiety scores showed that the levels were correlated (Figure 2; r²=0.395, p<0.01).

To analyze if psychosocial and clinical factors were related to the presence of psychological distress, the cohort was stratified into two subgroups: (1) subjects without anxiety and/or depression (<8 in HADS) and (2) subjects with anxiety and/or depression (≥8 in HADS). It was possible to observe statistically significant differences in group 2 in relation to group 1: younger subjects; lower educational levels; poorer understanding of the diagnosis and proposed treatment; higher psychosocial restriction; and higher intensity of pain (VAS) and physical disability (ODI). Other features displayed a tendency to be statistically significant: female; married; under psychological or psychiatric treatment; presence of eating disorder; inappropriate expectations about the surgical results in relation to the proposed treatment; and greater degree of physical impairment.

In respect to the preoperative screening, the vast majority of subjects in group 1 had a positive evaluation, while most of the subjects in group 2 had some reservation regarding the surgical treatment.

DISCUSSION

The psychosocial status of patients with LBP was analyzed prior to surgery in the current study. More than one-third of the cohort studied had emotional distress (anxiety and/or depression), and this was correlated with increased preoperative pain, disability, and with other social red flags.
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LBP can lead to a decreased ability to participate in a variety of activities such as work, leisure activities and interaction with family and friends. This leads to a downward physical and emotional spiral, which has been called “mental and physical deconditioning”. A key factor in the rehabilitation of the patient is adherence to treatment after surgery, with the initial care and progressive exercising. If the patient is mentally or socially discouraged, he probably will not feel compelled to perform the rehabilitation program, compromising the expected results and promoting a positive feedback to the condition. However, establishing the role of chronic LBP and depression in a patient is not simple.

The prevalence of psychological distress in the general population varies according to the sample pool, country, methods of assessment (survey, different questionnaires, or psychologic/psychiatric evaluation), comorbidities, and other factors that can affect the final findings. A systematic review of literature published between 1980 and 2004 found a 10.6% incidence for anxiety disorders in a pooled 1-year sampling, in which women generally had higher prevalence (44). The experience associated with these mental disorders varies according to different cultural subjective processes that are characteristic of each culture (38,3,19). In an international epidemiological study in general population of 10 countries, the prevalence of major depression during a year varied widely (3). The prevalence ranged from 1.2% (Japan) to 10% (USA), and was 5.8% in the Brazilian sample, which is gender-matched with the sample of our current work.

Depression and anxiety symptoms have been widely recognized to be present in chronic illness patients, and specifically in LBP patients. Depression and anxiety occurrence range from 17-52% (18,1,13) and from 12%-56% (39,1,13) respectively, depending on the study design, sample and mostly on the instrument of classification. In a Brazilian sample, the figures previously found were 17% for depression and 40% for anxiety in low back pain patients (18). Dichotomizing samples based on the use of self-rating scales for diagnostic purposes remains hazardous, as cut-off values can differ between goals. The variation in both optimal cut-off values and sensitivity and specificity might be due to differences in diagnostic systems, ‘gold standard’ instruments, HADS translations used, as well as to differences in samples and procedures in administration of HADS. For anxiety, HADS-A was given a specificity of 0.78 and a sensitivity of 0.9, and for depression, HADS-D was given a specificity of 0.79 and a sensitivity of 0.83 (4).

A purely organic model would not assume that psychosocial factors have any influence on the onset and maintenance pain; only that nociception results in a pain experience proportional to the severity of injury. However, several studies have shown a psychosocial impact on pain resolution (41,28,34,31,45).
As observed in the present study, psychological distress as depression and anxiety has been shown to be correlated with other psychosocial and clinical features in LBP patients such as pain and physical restriction levels, female patients (21), non-active worker status (22,20,42,2), social compensation (11), level of education (21) and diagnosis understanding (1). Several surveys report that many psychological disorders worsen the pain condition and physical restraint of patients, showing that patients with depression have a predominance of negative thoughts (43), low pain threshold (36) and higher functional restrictions (32).

Worker’s compensation is very prevalent and very important in patients who suffer from back problems (23). It is proven that beliefs and expectancies are critical cognitive facilitators or impediments to the recovery, and this highlights the importance of preoperative identification of this complicating factor. The literature has shown that patients with greater pain levels and worse outcomes also have tax incentives (9), reinforcement from family and friends (6,42), dissatisfaction or processes for absence from work (10,25,35) and litigation (12).

On the other hand, there are emotional processes that help in the recovery, such as good coping skills – thoughts, feelings and behaviors specific to the individual to adaptively deal with the pain, showing encouraging results for patients with back pain who use these tools coupled with hope and expulsion of catastrophic thoughts (5,40).

A single red flag should not be interpreted as a negative outcome predictor (33) Instead, a global evaluation of the psychosocial status should be performed by a psychologist, with self-reporting questionnaires but also with a more extensive interview. Patients are often unaware of their own psychological distresses or do not report them because of the perceived social stigma of a mental health problem or because they are afraid that the somatic issue would be discounted as arising from psychological issues.

Treatment with antidepressants alone may be a poor alternative to other treatments with known efficacy, such as cognitive behavioral therapy (30,24). Multidisciplinary treatment programs for patients with CLBP have shown stronger effects in treating pain, physical disability and depression symptoms than monodisciplinary treatments (37). Thus, a multidisciplinary approach seems to be crucial for the selection and also to the execution of an effective treatment program.

The major limitation of the current report is the study design – in a cross-sectional study it is difficult to interpret LBP and depressive symptoms with a simple cause and effect relationship. Additionally, a limited number of cases was analyzed, and it was not possible to imply strongest statistical data as odds ratio and confidence interval.

This work makes inferences about preoperative red flags and to gather preliminary data to support unprecedented further research and experimentation in the population of the country where the research was done.

CONCLUSION

Pain experience and relief are subjective parameters, not only determined by organic disorder, but also by emotional and social factors. Patients suffering from LBP show higher levels of depression and anxiety, which alter other important pathology-related findings. Sociodemographic and pain-related parameters should be taken into account in order to provide a more effective treatment.

REFERENCES

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