ABSTRACT

BACKGROUND AND OBJECTIVES: The aim of this study was to compare anxiety, depression and disability indexes in patients with myofascial pain with and without additional diagnosis of migraine.

METHODS: We included 203 patients of the Orofacial Pain Clinic of the University of California, Los Angeles, USA. Patients were over 18 years of age, both genders, with a primary diagnosis of myofascial pain. The patients were also evaluated for the presence of migraine according to the criteria of the International Headache Society. The sample was divided into two groups: 120 patients with only myofascial pain (Group 1) and 83 patients with myofascial pain and with an additional diagnosis of migraine (Group 2). The Beck Anxiety Inventory, Beck Depression Inventory and Migraine Disability Assessment questionnaires were applied. The Mann-Whitney test was used to compare the groups at a significance level of 5%.

RESULTS: Patients in group 1 presented significantly higher indexes in the Beck Anxiety Inventory (p=0.005), Beck Depression Inventory (p=0.025) and number of days lost and/or impaired (56.4 days) than those in group 2. The Migraine Disability Assessment Questionnaire scores for groups 1 and 2 were, respectively, for grade I; 48% and 24.1% for grade I; 9.2% and 3.6% for grade II; 8.2% and 22.9% for grade III; and, 34.7% and 49.4% for grade IV.

CONCLUSION: Patients with myofascial pain and migraine had significantly higher anxiety, depression and disability indexes (p<0.05), as well as moderate and severe disability levels considerably higher than those with only myofascial pain.

Keywords: Orofacial pain, Migraine, Temporomandibular disorders.

INTRODUCTION

Orofacial pain encompasses diseases represented by temporomandibular disorders (TMD), headache and other conditions, which reduce patients’ quality of life and involve billions of dol-
TMD are musculoskeletal disorders, affecting temporomandibular joint (TMJ), masticatory muscles and associated structures. Among the TMDs, myofascial pain (MFP) stands out, which singly corresponds to 45.3% of the diagnoses. It is defined as regional muscle pain associated with palpation sensitivity, characterized by the presence of hypersensitive points of muscle tissue (trigger points). MFP-patients are significantly more likely to depression and anxiety when compared to patients with joint dysfunction. About 55% of MFP-patients report migraine episodes. Migraine is defined as a primary headache, with 4 to 72 hours attacks, and characterized by unilateral pulsatile pain of moderate to intense intensity, aggravated by routine physical activity, associated with combinations of nausea, vomiting, photophobia, phonophobia, and aura. Migraine-patients are more likely to have depression (2.2 to 4.0 times) and anxiety disorders (3.5 to 5.3 times).

Although MFP and migraine present distinct pathophysiology, the masticatory muscles receive trigeminal sensory innervation, which is also responsible for the nociceptive impulses conduction of the cranial blood vessels involved in the migraine genesis, allowing a possible overlap of nociceptive stimuli in cases of comorbidities. TMD-patients experience increased headache frequency and severity in addition to a 10-fold higher migraine prevalence. Although it is reported that the concomitant occurrence of MFP and migraine leads to higher levels of pain at palpation, subjective pain perception and sleep/rest problems, studies investigating the psychological and emotional conditions in these cases are still scarce. This knowledge can contribute to the understanding of these conditions.

This study aimed to compare the anxiety, depression and disability indexes in MFP-patients, with and without an additional migraine diagnosis.

**METHODS**

A cross-sectional observational analytical study was carried out, following the recommendations of the Strengthening the Reporting of Observational Studies in Epidemiology (Strobe), in accordance with the Declaration of Helsinki. All participants signed the Informed Consent Form (ICF). Patients who presented themselves between August 1, 2005, and July 1, 2006, at the Orofacial Pain Clinic of the University of California (UCLA)’s School of Dentistry, Los Angeles, USA, complaining of facial pain were examined. The sample was calculated following their specific recommendations. The application and interpretation of these tests were done by a responsible psychologist, pain psychology specialist. The present study was approved by UCLA’s Ethics Committee on 07/27/2005.
Statistical analysis
In order to detect possible differences between groups 1 and 2 in relation to BAI, BDI, and MIDAS, the non-parametric Mann-Whitney test was used at a significance level of 5%. All analysis in this study were performed using SPSS software version 13.0.

RESULTS
The sample consisted of 203 patients, with 181 women (89.2%) and 22 men (10.8%), with an average age of 40.3±15.44 years. Group 1 was composed of 120 patients (59.11%), and group 2 was composed of 83 patients (40.89%). Regarding the BAI and BDI levels, the averages obtained comprised both groups in the mild anxiety score and in the mild to moderate depression score. In addition, group 2 presented values statistically higher than those of group 1 (p<0.05) in both questionnaires. Table 1 presents the descriptive measures and the comparison between groups of anxiety and depression levels.

Table 1. Descriptive measures and the comparison between groups of anxiety and depression levels

<table>
<thead>
<tr>
<th>Groups</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Average (Standard deviation)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAI</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>63</td>
<td>10.68 (10.24)</td>
<td>0.005*</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>55</td>
<td>14.87 (11.5)</td>
<td></td>
</tr>
<tr>
<td>BDI</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>55</td>
<td>9.79 (9.48)</td>
<td>0.025*</td>
</tr>
<tr>
<td>2</td>
<td>7</td>
<td>44</td>
<td>12.77 (10.22)</td>
<td></td>
</tr>
</tbody>
</table>

Table 2 presents the descriptive measures and the comparison between groups of each item of Migraine Disability Assessment Questionnaire.

Table 2. Descriptive measures and comparison between groups of each item of Migraine Disability Assessment Questionnaire

<table>
<thead>
<tr>
<th>Questions</th>
<th>Groups</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Average (SD)</th>
<th>p value (Mann-Whitney)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- How many days of work or school have you lost in the last three months due to your headaches?</td>
<td>1</td>
<td>0</td>
<td>90</td>
<td>3.06 (13.33)</td>
<td>p&lt;0.001*</td>
</tr>
<tr>
<td>2- How many days in the last 3 months did you notice that your performance at work or school was reduced by half or more due to your headaches?</td>
<td>1</td>
<td>0</td>
<td>90</td>
<td>5.01 (16.63)</td>
<td>p&lt;0.001*</td>
</tr>
<tr>
<td>3- How many days in the last 3 months have you been unable to perform homework due to your headaches?</td>
<td>1</td>
<td>0</td>
<td>90</td>
<td>9.39 (19.51)</td>
<td>0.009*</td>
</tr>
<tr>
<td>4- How many days in the last 3 months did your performance at homework was reduced by half or more due to your headaches?</td>
<td>2</td>
<td>0</td>
<td>90</td>
<td>13.24 (19.35)</td>
<td></td>
</tr>
<tr>
<td>5- How many days in the last 3 months have you lost family, social or leisure activities due to your headaches?</td>
<td>1</td>
<td>0</td>
<td>90</td>
<td>7.93 (18.97)</td>
<td>0.021*</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
<td>0</td>
<td>540</td>
<td>56.40 (89.83)</td>
<td>0.004*</td>
</tr>
</tbody>
</table>

DISCUSSION
Pain is an individual experience of high complexity, involving different aspects of life. Comparing the anxiety, depression and disability indexes, MFP-patients with an additional diagnosis of migraine presented significantly higher indexes (p<0.05) than patients with only MFP, supporting the null hypothesis rejection.

The sample consisted of 203 patients, with a woman:man ratio of 8.2:1. This proportion is expected since women seek treatment seven times more than men. This result is also close to that found by Zebenholzer et al., who in their multicenter study on the depression and anxiety impact on the burden and management of episodic and chronic headaches, had their sample composed of 84.1% of women in the episodic headache’s group, and 79.1% in the chronic headache’s group. Still, in relation to the sample, 59.11% of the patients presented an additional migraine diagnosis, close value to 56.5% found in a study with Brazilian population.

Among the numerous comorbidities of painful, especially chronic conditions, including migraine and TMD, anxiety and depression are prominent due to their high prevalence and their impact. In this study, significant differences were found in the anxiety and depression levels between the MIDAS questionnaire, in each group, are shown in table 3. Absent or mild levels of disability were higher in group 1, while moderate and severe levels were higher in group 2.
the groups (p<0.05), and group 2 presented higher averages in both cases (14.87 for anxiety and 12.77 for depression) in relation to group 1 (10.68 for anxiety and 9.79 for depression). This difference can perhaps be explained by the positive correlation between pain intensity and anxiety and depression levels, that is, the more intense the pain (as in cases of concomitant comorbidities), the higher the levels of anxiety and depression. Using the same assessment tools (BAI and BDI), depression anxiety scores in group 2 share the results of Santos, Sandin and Sakac, who found a positive correlation (p=0.031) between anxiety and the headache prevalence in Brazilian university students; and with the results of Falavigna et al., who found a higher prevalence of depression (p=0.001) in Brazilian adults with headache than in those without headache.

Approximately one-third of patients with migraine and anxiety have depression signs; and two-thirds of patients with migraine and depression exhibit anxiety signs, with the anxiety and depression combination associated with a higher headache frequency and anxiety attacks related to headache intensity exacerbation. However, the higher values did not mean, at least in this study, more depression and anxiety. Although statistically different, both groups were included in the mild anxiety score and the mild to moderate depression score. It can be affirmed, therefore, that group 2 presented more intense depression and anxiety symptoms, without this necessarily meaning a worse picture of depression and anxiety.

One of the most used instruments to assess headache-related disability is the MIDAS questionnaire. It captures the headache impact over a three months period, considered long enough to represent the actual patient’s experience, and short enough to allow a reliable and accurate resumption of headache’s history. In this research, there was no study of the results according to gender, or the presence or not of employment for this questionnaire’s data, since it is not influenced by these factors.

After comparing the MIDAS questionnaire’s results, group 2 presented significantly more disability than group 1, in four of the five questions (p=0.05). The only question that did not present significant statistics was No. 5, which measures the lost days in social, family, and leisure activities. This can be explained by the fact that patients tend to lose more days in domestic service (questions 3 and 4) than in leisure, social or family activities (question 5). In the present study, this fact was verified, with both groups having less lost days, or impaired in question 5 in relation to 3 and 4. Although in this study the average number of days in both groups placed them on the IV score (severe disability) of MIDAS, the patients in group 2 lost or had their production impaired in question 5 in relation to 3 and 4.

MFP and migraine alone are associated with increased levels of anxiety, depression, and disability, which exacerbate painful conditions. The worsening of these indexes (anxiety, depression, and disability) found in group 2 (coexistence of MFP and migraine comorbidities) suggests that, clinically, the treatments of these conditions should be multiple and also include the psychological/emotional factors to obtain satisfactory results. Future studies may help clarify this issue.

All the results of this research should be analyzed with caution, since there are limitations, as it is a cross-sectional, monocentric and restricted population study. It would be interesting to replicate such research, with longitudinal follow-up, in order to better understand the interrelation between comorbidities, as well as to study which patient’s characteristics predisposes him or are related to a greater occurrence of the MFP and migraine comoncomitance.

**CONCLUSION**

Patients with MFP and migraine presented significantly higher indexes of anxiety, depression and number of days lost and/or impaired, as well as moderate and severe levels of disability considerably higher than the group of patients with only MFP.

**REFERENCES**

7. Dahan H, Shir Y, Nicolau B, Keith D, Allison P. Self-reported migraine and chronic