

Clinical topographic analysis of neuropathic pain in patients admitted in a center of multidisciplinary treatment*

Análise clínico-topográfica da dor neuropática de pacientes admitidos em um centro de tratamento multidisciplinar

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ABSTRACT

BACKGROUND AND OBJECTIVES: Verbal investigation is a critical step of nursing neurological evaluation of neuropathic pain patients, due to its multidimensionality. There are few studies in the literature specifically dealing with this subject. In light of the above, this study aimed at evaluating medical records on clinical topographic characteristics of neuropathic pain reported by patients from a multidisciplinary management center.

METHODS: This is a documental, crossover and quantitative study evaluating 50 medical records of patients with established neuropathic pain diagnosis who came for routine consultations between January and June 2014. Data collection form was based on McGill Pain Questionnaire and data regarding age, gender, pain topography and presence of verbal descriptors were analyzed. Data were submitted to statistical analysis and Chi-square test was applied to compare association among variables.

RESULTS: There has been prevalence of females (64%), with mean age of 57 years. Most common pain descriptors were from the sensory dimension and were associated to cases where neuropathy affected lower limbs ($p=0.006$).

CONCLUSION: There has been association between topography and pain dimension. Due to the subjectivity and complexity involving neuropathic pain evaluation, it is necessary to understand its clinical manifestations and to prepare the whole multidisciplinary team, especially Nursing, which plays a critical role in verbal investigation of painful patients.

Keywords: Nervous system diseases, Neurological evaluation, Neuropathic pain, Nursing, Pain clinics, Pain measurement.

RESUMO

JUSTIFICATIVA E OBJETIVOS: A investigação verbal é uma etapa fundamental do exame neurológico do enfermeiro na avaliação do paciente com dor neuropática, dada à sua multidimensionalidade. Na literatura, poucos são os trabalhos que lidam especificamente com esse tema. Diante disso, o objetivo deste estudo foi analisar registros em prontuários sobre as características clínico-topográficas da dor neuropática relatadas por pacientes de um centro de tratamento multidisciplinar.

MÉTODOS: Estudo documental, transversal, de natureza quantitativa. Analisaram-se 50 prontuários de pacientes com diagnóstico estabelecido de dor neuropática que compareceram para consultas de rotina entre janeiro e junho de 2014. Utilizou-se formulário para coleta de dados baseado no Questionário de Dor McGill e foram analisados dados referentes a idade, gênero, topografia da dor e presença de descritores verbais. Os dados foram submetidos a análise estatística e aplicou-se teste de Qui-quadrado para comparar a associação entre as variáveis.

RESULTADOS: Prevaleceram pacientes do gênero feminino (64%), com média de 57 anos. Os descritores de dor mais citados foram da dimensão sensorial e se associaram aos casos em que a neuropatia atingia os membros inferiores ($p=0,006$).

CONCLUSÃO: Foi observada uma associação entre topografia e dimensão da dor. Em virtude da subjetividade e complexidade que envolvem a avaliação da dor neuropática, faz-se necessário o conhecimento das suas manifestações clínicas e o preparo de toda a equipe multidisciplinar, sobretudo da Enfermagem, que desempenha papel fundamental na condução da investigação verbal do paciente com dor.

Descritores: Clínicas de dor, Dor neuropática, Doenças do sistema nervoso, Enfermagem, Exame neurológico, Mensuração da dor.

INTRODUCTION

According to the International Association for the Study of Pain (IASP), pain is defined as unpleasant sensory and emotional experience associated to real or potential injury¹. Pain is reported since the early days of mankind; however its definition has gone through significant changes until current days. Currently, pain may be seen as a multidimensional phenomenon involving physiologic, sensory, affective and cognitive

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aspects and its evaluation shall involve detection, qualification and measurement of all these dimensions².

As a function of its nature, pain may be classified as nociceptive or neuropathic. The former is caused by the activation of peripheral nociceptors, with natural physiologic transduction and recognized modulation³. Neuropathic pain is a consequence of injuries or diseases affecting somatosensory nervous system with consequent central impairment of information processing and, for such, its symptoms go beyond the physical healing period of such injuries and may be associated to motor, psychic, neuroendocrine and neurovegetative deficits⁴. To identify individuals with neuropathic pain requires approaches involving verbal investigation by means of pain descriptors⁵. The analysis of such descriptors is a stage of nursing neurological evaluation and, in the literature, there are few studies specifically dealing with this subject under neuropathic pain patients' perspective, considering that such procedure is not exclusively object of neurologists, but it is also part of the multiprofessional physical evaluation⁶.

So, this study aimed at analyzing clinical topographic neuropathic pain characteristics, reported by patients of a multidisciplinary treatment center during neurological evaluation, and at discussing available scientific literature results. The analysis of the defined profile provides subsidies for the planning of health actions based on prevalence of cases, as well as contributes for the technical-scientific knowledge of health professionals, especially those involved with pain management.

METHODS

This is a documental, crossover, descriptive and quantitative research carried out in a small-sized multidisciplinary pain management clinic located in the city of São José dos Campos, SP, where the vast majority of patients are private or referred by health insurance and who are followed by professionals of the following specialties: Neurology, Orthopedics, Nursing, Chiroacupuncture, Physiotherapy, Psychology and Nutrition.

Data were collected during three weeks of the month of July 2014, by analyzing medical records of 50 adult patients, of both genders, belonging to the clinic database, randomly and sequentially selected. All patients had established diagnosis of neuropathic pain and had their anonymity preserved, being medical records data used only for statistical purposes.

A form was developed, based on McGill Pain Questionnaire, which is a validated inventory with 78 descriptors organized in 4 dimensions: sensory, affective, evaluative and mixed⁷. This form had patients' identification data and data regarding age, gender, pain topography and presence of neuropathic pain verbal descriptors.

Descriptive and inferential statistical analyses were used. The software GrapPad Instat for Windows, version 3.0 was used for descriptive analysis, where the numerical variable age was evaluated by means of descriptive measures of centrality (mean and median) and of dispersion (minimum, maxi-

imum and standard deviation). Categorical variables (gender, pain topography and verbal descriptors) were expressed in percentages, absolute and relative frequencies. The software RStudio, version 0.98.1028 was used for inferential analysis where Chi-square test of linear trend was used to compare the association between pain topography and dimension, with statistical significance of $p < 0.05$.

This study was approved by the Research Ethics Committee, Paulista University, under process 31382214.0.0000.5512.

RESULTS

From 50 patients meeting inclusion criteria, 64% (n=32) were females. Age has varied from 22 to 91 years with mean of 57.3 ± 14.2 years.

With regard to verbal investigation, figure 1 shows the scenario of pain descriptors, allocated according to their dimensions. In cases where patients have reported two or more descriptors, all of them were considered since different pain modalities may be present according to the type of affected fiber.

When investigating the association between pain topography and dimension, results have shown that sensory dimension descriptors are associated to patients with LLLL neuropathic pain, as shown in table 1. To confirm such hypothesis, Chi-

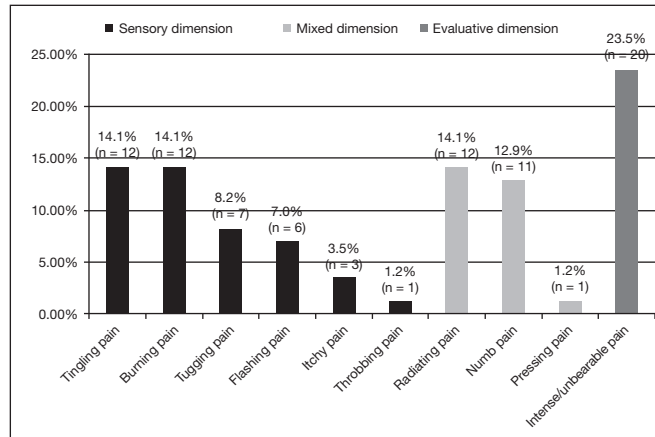


Figure 1. Neuropathic pain descriptors identified in the sample (n=85)

Table 1. Clinical topographic association of pain and p values obtained by Chi-square test ($p < 0.05$)

Pain topography	Sensory dimension	Mixed dimension	Evaluative dimension	p value
Lower limbs	20 (48.8%)	7 (29.2%)	7 (35%)	0.006*
Thoracolumbar region	6 (14.6%)	7 (29.2%)	8 (40%)	0.866
Upper limbs	6 (14.6%)	3 (12.5%)	0 (0%)	0.317
Head/face	4 (9.8%)	1 (4.2%)	0 (0%)	0.179
Cervical region	4 (9.8%)	2 (8.3%)	1 (5%)	0.367
Gluteal region	0 (0%)	4 (16.6%)	4 (20%)	1.000
Intercostal region	1 (2.4)	0 (0%)	0 (0%)	**
Total descriptors	41 (100%)	24 (100%)	20 (100%)	

*Statistically significant Chi-square test; ** inexistent p value.

square test of linear trend was applied with comparison freedom level of 2. Chi-square value (χ^2) corresponded to 9.9412, being higher than critical Chi-square ($\chi^2_{c=0.103}$).

DISCUSSION

In recent years, the choice of multidisciplinary pain management clinics as alternative for traditional chronic pain management is becoming popular. However, information about users of such health service is still scarce in scientific studies⁸. The interaction between different knowledge and patients' multidisciplinary approach in pain clinics positions them as active subjects in the therapeutic process and provides a holistic vision to professionals, which makes clinical information more detailed and the diagnosis faster⁹.

In our study, the sample has shown predominance of females, which reinforces the hypothesis of previous studies which have evidenced higher neuropathic pain prevalence among females^{6,10-12}. Hormonal differences, easiness to verbalize pain and lower tolerance to pain may explain such results⁶.

It is consensus in the literature that longevity progressively and proportionally increases the risk for chronic pain^{10,13}, which is in line with our results, which have shown sample age distribution with mean of 57 years. This prevalence may be associated to labor activities or to the aging process, which increases the risk of developing chronic-degenerative diseases¹⁴.

With regard to verbal investigation to screen pain descriptors, the form based on the McGill Pain Questionnaire was used because it is a multidimensional and validated tool which allows characterizing and separating pain affective, sensory, evaluative and mixed dimensions⁷. In our study, 10 descriptors were reported by the sample and this broad spectrum of qualifications reinforces the complexity of pain, as well as its individuality. Six from 10 reported descriptors belong to the sensory dimension. From these, there has been prevalence of tingling (14.1%) and burning (14.1%) symptoms which are attributed to the aggression to thin type C and A-delta fibers, respectively. These results confirm previous studies on the subject^{6,15}.

According to verbal investigation data, a heterogeneous pain verbal qualification group was identified; however, the topographic pattern was more homogeneous. As to body location of pain, there has been predominance of LLLL (48.78%). Similarly to this study, pain pattern in the distal portion of lower extremities has been referred by several authors as clinical presentation typical of neuropathy^{16,17}.

Up to now, there were no scientific studies in the literature trying to associate topographic patterns seen in the neurological exam and neuropathic pain descriptors reported during patients' verbal investigation in multidisciplinary management centers. Our study has identified that sensory dimension is frequently associated to cases where neuropathic pain affects LLLL. For being poorly explored data, such hypothesis was submitted to statistical analysis and was significantly proven, showing that deviations were not due

to chance.

Considering this association, it is possible to infer that spinothalamic tract, pathway responsible for the transmission of sensory dimension painful information to thalamus and cortex¹⁸, had prevailing action on LLLL neuropathies affecting the sample, configuring symptoms of tingling, burning, tugging, flashing, itchy and throbbing pain.

Neurological evaluation knowledge and understanding, as part of physical evaluation, are key for the diagnosis of neuropathic pain. Traditionally, every health professional should recognize patients experiencing pain; however, some professionals, such as nurses, should develop integral assistance to painful patients, to make feasible a multiprofessional care¹⁹. In light of such responsibility, subsidies to understand neuropathic pain in its different dimensions should be incorporated to clinical practice to guide diagnostic evaluation and assure the correct assistance direction²⁰.

CONCLUSION

Notwithstanding the limitations of a small sample size, this study has identified an association between pain topography and dimension. Another relevant data is the similarity observed between patients looking for multidisciplinary treatment in specialized clinics and those users of traditional pain ambulatories.

Due to subjectivity and complexity involving neuropathic pain evaluation, it is necessary to know its clinical manifestations and to prepare the whole multidisciplinary team, especially Nursing, who plays a critical role in verbal investigation of painful patients.

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