SCIENTIFIC ARTICLE

Implementing a chronic pain ambulatory care: preliminary results

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Abstract
Background and objectives: Pain is one of the most common reason for seeking medical care. This study aimed to analyze patients with chronic pain in Maricá, Rio de Janeiro State, Brazil.
Methods: A transversal retrospective study with 200 patients, who were treated in ambulatory care in a public hospital from June 2014 to December 2015. The variables considered were: pain intensity, type of pain, anatomical location, diagnosis and treatment. The data were statistically analyzed, the Fisher's exact test was applied, and the probability p was significant when ≤ 0.05.
Results: We analyzed 200 patients with chronic pain, most of them female (83%). Mean age was 58.6 ± 13.01 years old. The patients were classified in groups by age, six groups with ten years of difference between them. Main age range was the 50-59 years old group, with 49 females (32%) and 5 males (15%). About 65.5% of the total of patients (131) had severe pain (Numeric Rating Sacale was 9.01). Mixed pain was predominant, affecting 108 patients (92 females and 16 males, what represents 55% and 47% of the total of females and males, respectively, that participate in the study). The most prevalent anatomical pain (159 patients, 131 females and 28 males) was in the lower limbs. Lower back pain was present in 113 of the 200 patients (94 females and 19 males). In the 30-39, 50-59, 60-69 years old group, the results for pain locations were significant: $p = 0.01$, $p = 0.0069$, $p = 0.0003$, respectively.
Conclusion: The prevalence of chronic pain was associated with females in 50–59 years old and severe mixed pain. Pain was located mainly in lower limbs and lumbar region. The most frequent diagnosis was low back pain followed by fibromyalgia. The patients were informed about their disease and treatment.
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Implementação de atendimento ambulatorial para dor crônica: resultados preliminares

Resumo

Justificativa e objetivos: A dor é um dos motivos mais comuns para procurar atendimento médico. Este estudo teve como objetivo analisar pacientes com dor crônica atendidos em Maricá, no estado do Rio de Janeiro, Brasil.

Métodos: Estudo transversal retrospectivo com 200 pacientes, atendidos em ambulatório de um hospital público no período de junho de 2014 a dezembro de 2015. As variáveis analisadas foram: intensidade da dor, tipo de dor, localização anatômica, diagnóstico e tratamento. Os dados foram submetidos à análise estatística, aplicando-se o teste exato de Fisher, e o valor p foi significativo quando $\leq 0,05$.

Resultados: Analisamos 200 pacientes com dor crônica, sendo a maioria mulheres (83%). A média de idade foi de $58,6 \pm 13,01$ anos. Os pacientes foram classificados em seis grupos de acordo com a faixa etária, com dez anos de diferença entre eles. O grupo principal foi entre 50-59 anos, com 49 mulheres (32%) e 5 homens (15%). Dos pacientes, 65,5% apresentaram dor intensa (Escala Visual Numérica 9,01). A dor mista foi prevalente, afetou 108 pacientes (92 mulheres e 16 homens, o que representa 55% e 47% do total de mulheres e homens, respectivamente). A dor anatômica mais prevalente (159 pacientes, 131 mulheres e 28 homens) foi nos membros inferiores. A dor na parte inferior das costas estava presente em 113 das 200 pessoas analisadas (94% mulheres e 19% homens). Nos grupos de faixa etária entre 30–39, 50–59 e 60–69 anos, os resultados para a localização da dor foram significativos: $p = 0,01$, $p = 0,0069$, $p = 0,0003$, respectivamente.

Conclusão: A prevalência de dor crônica foi associada ao sexo feminino na faixa de 50–59 anos e à dor mista intensa. A dor foi localizada principalmente nos membros inferiores e região lombar. O diagnóstico mais frequente foi de lombalgia seguida de fibromialgia. Os pacientes foram informados sobre suas doenças e tratamento.

Introduction

Chronic pain is among the most common demand for searching medical care. The International Association for the Study of Pain (IASP) defines it as pain without apparent biological value that has persisted beyond the normal tissue healing time usually taken to be 3 months. It is recognized worldwide as a serious health problem. Approximately 60 million people endure chronic pain, around 10% of the world's population.[1] Studies[1,2] determine the prevalence of chronic pain in around 20%–25% of adults. A Brazilian study showed prevalence in Rio de Janeiro, São Paulo, Florianópolis, and Salvador of 31%, 29%, 26%, and 40% respectively.[3] Although there are few estimates of the prevalence of chronic global pain the World Health Organization (WHO) estimates that 10% of adults are newly diagnosed with chronic pain each year.[1]

The prevalence of chronic pain remains poorly understood, even in the developed country where several epidemiological studies have been conducted. In Brazil, chronic pain is the main cause of demand at pain ambulatory care. More detailed studies are needed that will greatly contribute to the establishment of social policies, health and goals for the prevention and appropriate treatment of pain.[4]

Chronic pain should be understood like a disease and, not simply, like a symptom. It is a multidimensional phenomenon that promotes impacts on quality of life and on the functional and social capacity with serious consequences in physical, psychological and behavioral conditions.[5]

Understanding chronic pain needs not only the knowledge of the biological mechanisms of pain but also the evaluation of other factors associated with the disease: age, gender, ethnicity and weight; psychosocial (depression, anxiety, smoking and excessive alcohol consumption); and socioeconomic conditions (marital status, level of schooling, employment and physical activity).[6]

The systematic review conducted by Fayaz et al. in the United Kingdom found that chronic pain prevalence increases steadily with increasing age, affecting 62% of the population over 75 years old.[7]

An interdisciplinary therapeutic approach is necessary for the purpose of pain relief, physical, social and emotional restoration of the patient. According to the WHO Normative Guidelines on Pain Management Report,[8] the approach should be established by a multiprofessional team.

A significant number of pharmacological and non-pharmacological therapies are available for the treatment of chronic pain. The WHO Normative Guidelines endorse the therapeutic combination called multimodal therapy is needed.[8]

This study aimed to describe the pain profile characteristics (intensity, type, anatomic location, diagnosis and treatment), as well as the age and gender profile of the first 200 patients with chronic pain consulted in the first pain ambulatory care of the Hospital Municipal Conde Modesto Leal, the primary funder of this study, in the small city of Maricá (127.461 inhabitants), in Rio de Janeiro, Brazil. Previously Maricá was not provided of such medical facilities. The

Table 1 Pain intensity by the Numerical Rating Scale (NRS).

Pain level (NRS)	Gender (F/M) distributed by 10 years age ranges						Total	Percentage
	20–29 F/M	30–39 F/M	40–49 F/M	50–59 F/M	60–69 F/M	≥70 F/M	20–≥70 F/M	% F/M
Mild (1–3)	0/0	0/0	0/0	1/1	1/0	0/0	2/1	1/3
Moderate (4–6)	3/0	3/0	8/2	17/2	13/4	13/1	57/9	34/26
Severe (7–10)	2/0	7/0	19/4	31/2	27/12	21/6	107/24	65/71
Total	5/0	10/0	27/6	49/5	41/16	34/7	166/34	
Percentage (%)	3/0	6/0	7/18	32/15	26/47	22/21		

F, female; M, males; no significant results by Fischer's exact test.

inauguration of the pain ambulatory care brought benefits to the population addressed in this paper.

Methods

The study was approved by the direction of the Hospital Municipal Conde Modesto Leal, in Maricá, state Rio de Janeiro, Brazil (approved at 27/9/2017) and by the Research Ethics Committee of the Hospital Clementino Fraga Filho, of the Federal University of Rio de Janeiro, Brazil, no. CAAE: 80142617.2.0000.5257 (approved at 21/12/2017). The patients did not sign the informed consent because the data were obtained from the hospital records.

This transversal, retrospective study was performed with the first 200 patients who were attended at the hospital, between June 2014 and December 2015 for chronic pain.

The patient's records were in the Hospital Medical File. All data were collected from the records of the first 200 patients. The data refers to: age (in age groups), gender and pain related aspects, such as: pain intensity (by numerical rating scale – NRS), type, anatomical location, diagnosis and treatment of pain.

The criteria for classification of chronic pain were the duration longer than 6 months. The numerical rating scale[9] was used to quantify the intensity of the individuals' pain perception, being graded according to ordinal scores: no pain (0), mild (1–3), moderate (4–6) and severe (7–10). The patient chose the number that best represented the subjective intensity of pain. Pain intensity was assessed at the end of the first medical appointment at the Chronic Pain Clinic.

The episodes related to pain intensity, type (nociceptive, neuropathic and mixed), anatomical location, diagnosis and treatment, as well as, the total of each gender for each age group were compared using Fisher's exact test for

contingency table of 2×2. The probability p (2 tails) was recognized as significant when ≤0.05. The table of percentages was obtained by multiplying the sum of each gender or variable by 100 and dividing the quotient by the total sum of each gender or variable.

Results

From the total of 200 patients with pain, 166 were females and 34 males. The mean age was 58.66 ± 13.01 years. The ages were classified in 6 age groups of 10 years (20–29; 30–39; 40–49; 50–59; 60–69, 70 ≥years).

With regard to the pain intensity, the Numerical Rate Scale (NRS) showed that 107 females (65%) and 24 males (71%) had severe pain (NRS 7–10), totalizing 131 patients, (mean NRS score was 9.01). The moderate pain (NRS 4 to 6) totalizing 66 patients: 57 females (34%) and 9 males (9%). Mild pain (NRS 1–3) did not reach much expression only with 3 patients. The main age range was the 50–59 age group with a total of 54 patients: 49 females (32%) and 5 males (15%). The males had a main representation in the 60–69 age range with 57 patients: 41 females (26%) and 16 males (47%). The 40–49 group totalized 33 patients: 27 females (7%) and 6 males (18%) (Table 1).

Regarding the pain types (nociceptive, neuropathic and mixed), the mixed pain was composed of 108 patients: 92 females (55%) and 16 males (47%). Neuropathic pain totalized 45 patients: 40 females (24%) and 5 males (15%). Nociceptive pain was represented by a total of 47 patients: 34 females (21%) and 13 males (38%). The 50–59 age range totalized 54 patients: 49 females (30%) and 5 males (15%). The 60–69 age range was composed of 57 patients: 41 females (25%) and 16 males (47%) (Table 2).

Referring to the anatomical locations of pain, there was a total of 10 anatomical regions summing 663 locations being

Table 2 Pain types.

Pain type	Gender (F/M) distributed by 10 years age ranges						Total	Percentage
	20–29 F/M	30–39 F/M	40–49 F/M	50–59 F/M	60–69 F/M	≥70 F/M	20–≥70 F/M	% F/M
Nociceptive	1/0	1/0	5/1	6/2	13/6	8/4	34/13	21/38
Neuropathic	2/0	5/0	10/1	9/0	12/3	2/1	40/5	24/15
Mixed	2/0	4/0	12/4	34/3	16/7	24/2	92/16	55/47
Total	5/0	10/0	27/6	49/5	41/16	34/7	166/34	
Percentage (%)	1/0	6/0	16/17	30/15	25/47	20/21		

F, female; M, males; no significant results by test exact Fischer.

Table 3 Anatomical location of pain.

Anatomical location of pain	Gender (F/M) distributed by 10 years age ranges						Total	Percentage
	20–29	30–39	40–49	50–59	60–69	≥70	20–≥70	%
	F/M	F/M	F/M	F/M	F/M	F/M	F/M	F/M
Cervix	2/0	1/0	8/3	17/1	11/3	6/0	45/7	8/7
Thorax	1/0	5/0	3/1	10/	8/2	8/0	35/4	6/4
Low back	0/0	4/0	21/3	27/4	23/8	19/4	94/19	17/18
Head	4/0	4/0	6/0	13/1	4/2	2/0	33/3	6/3
Upper limbs	2/0	4/0	8/3	32/3	23/6	21/3	90/15	16/14
Shoulders	1/0	0/0	6/1	14/2	11/1	12/3	44/7	8/7
Hands	0/0	2/0	3/2	4/0	2/1	3/0	14/3	3/3
Lower limbs	2/0	6/0	21/5	40/3	31/14	31/6	131/28	23/27
Knees	0/0	0/0	4/2	11/1	12/6	12/3	39/12	7/11
Feet	0/0	1/0	4/1	10/0	8/3	10/3	33/7	6/7
Total	12/0	27/0[a]	84/21	178/16[b]	133/46[c]	124/22	558/105	
Percentage (%)	2/0	5/0	15/20	32/15	24/44	22/21		

F, female; M, males; $p \leq 0.05$ significant.
[a] $p = 0.01$, 30–39 ages.
[b] $p = 0.0069$, 50–59 ages.
[c] $p = 0.0003$, 60–69 ages.

558 for females and 105 for males. The lower limbs totalized 159 pain locations: 131 for females (23%) and 28 for males (27%). The low back pain with 113 locations: 94 for females (17%) and 19 for males (18%), which was the second most common region followed by the upper limbs with a total of 105 locations: 90 for females (16%) and 15 for males (14%). The 50–59 age range was represented by a total of 194 anatomical locations: 178 for females (32%) and 16 for males (15%), $p = 0.0069$. The 60–69 age range totalized 179 locations: 133 for females (24%) and 46 for males (44%), $p = 0.0003$. In 30–39 age range had location with 27 for females (5%), but none for males $p = 0.01$ (Table 3).

The diagnosis totalized the number of 421: 377 for females and 44 for males. Lumbar sciatic pain was outstanding with 122 diagnoses: 107 for females (28%) and 15 for males (34%). Fibromyalgia totalized 67 diagnoses: 64 for females (17%) and 3 for males (7%). Cervicobrachialgia summed 58 diagnoses: 50 for females (13%) and 8 for males (18%). Arthritis totalized 51 diagnoses: 45 females (12%) and 6 males (14%). Dorsalgia with 41 diagnoses: 37 females (10%) and 4 males (9%). Headache summed 35 cases: 32 females (8%) and 3 males (6%). The number of other diagnosis such as neuropathic, post zoster and trigeminal neuropathies, complex regional pain syndrome fell sharply since the sum of each of them is under 10. The 50–59 age range had a total of 123 diagnosis: 116 for female (31%) and 7 for males (16%). The 60–69 age range summed 112 diagnoses: 90 for females (24%) and 22 for males (50%).

The drugs used for the first treatment totalized 720 with 579 for females and 141 for males. They were: painkillers, opioids, muscle relaxants, antidepressant and anticonvulsants. Dipyrone and paracetamol totalized 185 prescriptions: 151 for females (26%) and 34 for males (24%) followed by antidepressants with 165 prescriptions: 137 for females (24%) and 28 for males (20%). The anticonvulsants summed 115 prescriptions: 92 for females (16%) and 23 for males (16%). The relaxants totalized 154 prescriptions: 122 for females (21%) and 32 for males (2%). Only 40 patients were prescribed with opioids: 29 for females (5%) and 11 for males (8%). The 50–59 year range had a total of 158 drugs:

136 for females (24%) and 22 for males (16%). The 60–69 age range summed 210 drugs: 141 for females (24%) and 69 for males (49%), $p = 0.0001$.

The interventional methods totalized 110: 100 for females and 10 for males. The trigger points dry needling (acupuncture needle) was the most used with 27 females (27%) and no male. The trigger point with 1% lidocaine was utilized in a total of 26 applications: 22 in females (22%) and 4 in males (40%), followed by paravertebral blockade with 1% lidocaine also totalizing 26 cases: 25 for females (25%) and 1 for male (10%). Epidural blockade with 80 mg of Depo-Medrol (Methylprednisolone) totalized 8 administrations: 5 in females (5%) and 3 in males (3%), $p = 0.042$. Other interventions realized were: periarticular infiltrations totalizing 21 applications: 19 in females (19%) and 2 in males (20%) and stellate ganglion blockade in a total of 2 females (2%) and no male.

Discussion

The implementation of a chronic pain clinic for outpatients in the town of Maricá was very relevant, because it provided the diagnosis and the beginning of an adequate chronic pain treatment for patients who before had no access to this kind of treatment. It is important to note that most of the patients had already been treated by physicians of several specialties, but they continued to complain of pain. A difficulty was expected in relation to the training of health professionals unspecialized in pain purposes. Rondinelli et al. warn about the need for permanent education in health, regarding the pathophysiology, treatment of pain and the structuring of a pain. These actions would strengthen the interaction between professionals and the patients.[10]

Although severe chronic pain may arise in a relatively young age, our results showed that pain is more frequent in the older age groups and females are more affected than males. The 50–59 age range the females (32%) had more pain than males, while men are mainly affected in the range from 60 to 69 ages (47%). Many studies corroborate these

results when they stated that chronic pain becomes more common with increasing age, especially in women[4,7,11,12] and concluded that episodes are more frequent and of longer duration in women than in men.[4] Fayaz et al. showed that the prevalence of chronic pain in 65–74 years old was lower than the prevalence in the 55–64 year-old; stratification by gender in their study demonstrates that this drop is due to reduced pain reporting by male participants in the 65–74 year-old age.[7]

Recent studies suggest that the participation of gonadal hormones in the neuroimmune modulation of pain may represent an important cause of this difference in the presence of pain between the genders.[13–15] This difference could be also related to the loss of muscle mass slightly later in men when compared to women.[16] No studies were found comparing sarcopenia (progressive loss of muscle mass) related to aging and gender in chronic pain.

Regarding chronic pain other factors should be considered, such as the behavioral response to pain, including the cognitive component.[14] Ambulatory care showed that intense pain over moderate and mild pain prevailed for both female and male. It is also worth noting that many elderly people do not report their pain because they incorrectly believe that pain is expected or normal consequence in the aging process.[11] However, studies have questioned that one of the reasons for a decline in pain after the age of 65 may be a reduction in the nociceptive pathways of the elderly.[17] Finally, the question is whether this difference between genders is only related to the biological mechanisms of pain or associated to a contribution of psychological and social factors.

In present study, there was a predominance of mixed pain (a combination of nociceptive and neuropathic mechanisms) like the results of Bouhassira et al.[18] Women are at high risk for neuropathic pain compared to men, according to studies by Fayaz et al.[7] and Filling et al.[19] These results were also obtained in our study.

Authors confirmed a prevalence of skeletal muscle pain in the elderly.[20] Reduced mobility, impairment of regular physical activity, falls, depression, anxiety, sleep disturbance and isolation are factors associated with pain. Another factor that influences the appearance of pain in the elderly is the lack of family and social relationships.[17,20]

Cipriano et al. and Fillingim et al. found a greater prevalence of pain in the musculoskeletal system, coinciding with the result of this study.[4,19] In our study, most of pain complaints came from women in the 50–59 age range, other studies concluded that women between 45 and 60 years old had an increase in the incidence of joint and spinal pain in the period called perimenopause.[20,21]

Goldberg remarks that pain is a disease which widely is cited as a symptom. Due to this misconception the health system had disregarded of the pain management.[1] It is very important to sensitize public health managers to this issue.[1,5] The diagnosis is of paramount importance since the treatment efficiency depends on it. In our study, the more prevalent diagnosis was lumbar sciatic pain, followed by fibromyalgia; we did not find any similar result to compare.

Concerning the treatment of the patients, they were treated exclusively with drugs: analgesics, opioids, muscle relaxants, antidepressant and anticonvulsants. Dipyrone and paracetamol stood out totalizing 185 prescriptions.

The age range of 60–69 shows a more expressive increase of the need for treatment of chronic pain in men than in women ($p = 0.0001$), a relation which is opposed to the 50–59 age range in which the percentage of women exceeds that of men but without reaching significance. These outcomes are in accordance with the same age ranges of the

anatomical location analysis. Fillingim et al.[22] states that sex of an individual does not directly influences pain, rather sex differences in pain reflect the effects of other biological and psychosocial process (e.g. sex hormones, inflammatory responses, gender roles, pain coping). Though age differences in pain and sex differences in pain perception have been widely reported, whether sex differences comparable across age groups has not been determined. In the study of Campbell et al.[23] they remarked that sex differences emerged for most of the pain measures, and there was no sex by age interactions, suggesting that sex differences in pain perception were relatively consistent across age groups.

Lack of medication for the treatment of pain is a harmful barrier. Little progress has been made in this way and ten million people have to endure pain due to the lack of treatment or its consequences.[24] There is a need to educate patients, health professionals and managers about the use and distribution of medicines. It is very important to emphasize that patients with chronic pain hard to treat should have access to all diagnostic options, as well as, therapeutic modalities: pharmacological, physiotherapeutic, psychological, surgical, interventional procedures, physical therapy, among others.[12]

In the present study the intervention was headed by trigger point dry needling followed by paravertebral blockade and trigger point injections for women. For males, epidural blockade with Depo-Medrol®, periarticular blockade with lidocaine and dexamethasone and paravertebral blockade with lidocaine gained importance. According to the European guidelines,[25] which specifically studied nonspecific low back pain, no single invasive treatment, same as the listed above in our study, showed significant results. High quality studies are required to examine the effectiveness of those procedures.

Conclusion

The prevalence of chronic pain was associated with females in 50–59 years and severe mixed pain. Pain was located mainly in lower limbs and lumbar region. The most frequent diagnosis was low back pain followed by fibromyalgia. Patients were aware about their disease and treatment.

Conflicts of interest

The authors declare no conflicts of interest.

Acknowledgments

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