Original Article
Acta of Shoulder and Elbow Surgery 2017 July - Dec;2(2): 20-23

Prevalence of Musculoskeletal disorders of the Shoulder in a Hospital of the City of Buenos Aires - Retrospective study

Muhafara, Gastón Jorge[1], Cura, Adriano Javier[1], Tozzi Walter Ariel[1], Villarruel Matias[1], Virgilio Sacha Ali[1], Mariano Alfredo[1], Esperón Luis Francisco[1]

Abstract

Introduction: Musculoskeletal disorders of the shoulder are recognized as the third cause of medical consultation with the health service, interfering in the activities of daily life of patients, both personally and at work. With regard to the diagnostic criteria, upon classifying the different pathologies, no universal consensus exists. In Argentina, no published data on individuals with this alteration who have received physical therapy (PT) treatment have been found. The objective of this study was to determine the prevalence and epidemiological characteristics of adult patients diagnosed with a shoulder pathology, who visited the outpatient Physical Therapy Department(PTD) of the Parmenio T. Piñero Hospital in a one-year period.

Materials and Method: Descriptive, cross-sectional, and retrospective study. A search of the database of the PTD of the Parmenio T. Piñero Hospital was carried out, selecting the PT files of patients with a shoulder pathology who had a medical consultation between June 1, 2015 and May 31, 2016.

Results: During the period covered by the study, a total of 1423 patients had medical consultations with the PTD, with a prevalence of shoulder pathologies of 10.05 % (143/1423). The average age (SD) was 52.9 ± 16.74 years of age, with 56.64 % of females (n = 81). The patients analyzed were mainly housewives, retirees, and housekeepers. The main reason of consultations was the subacromial syndrome, with 53.85 % (n = 77), followed by trauma conditions, with 21.68 % (n = 31). The discontinuance rate was 51.74 %.

Conclusion: This study enabled us to know the epidemiological characteristics of adult patients with a shoulder pathology, who visited the Outpatient PTD of the Parmenio T. Piñero Hospital in a one- year period.

Key words: Prevalence, musculoskeletal disorders, shoulder, Hospital, physical therapy

Introduction

Musculoskeletal disorders of the shoulder are recognized as the third cause of medical consultation with the health service [1]. According to international literature, 18-26 % of the adult population will have pain in this joint at some point in life [2], and, in turn, an incidence of 19 % of shoulder alterations is estimated [3].

The quality of life of the individuals affected by these disorders tends to decrease, interfering in the activities of daily living (ADL), including personal life as well as work and leisure. This has an economic impact, since it not only increases the costs of the health system, but it also results in poor performance and rising absenteeism in the workplace [2]. A proof of this is that 13 % of shoulder alterations are associated with labor causes, since certain physical actions constitute a risk factor for musculoskeletal disorders.

The cingulate of the shoulder can be affected by different physiopathological processes, which confers a multifactorial character to the cause of injury.

Consequently, there are different risk factors, such as age, gender, psychological factors, smoking, the existence of some underlying pathology, work activity, domestic and/or sports activities, and traumatism, among others [2,4].

While there are different musculoskeletal disorders that can affect the shoulder region, upon physical examination, a similar clinical manifestation can be found, regardless of the cause. The three most common symptoms are pain, limited movement, and loss of strength [4]. Approximately 50 % of new shoulder pain episodes disappear after 8 to 12 weeks. However, in 40 % of the cases, pain persists for over a year [3].

With regard to the diagnostic criteria, upon classifying the different pathologies, no universal consensus exists [5]. In addition, in Argentina, there are no epidemiological data on individuals with musculoskeletal disorders of the shoulder who have consulted with the Physical Therapy Department (PTD).

Therefore, the objective of this study was to determine the prevalence and epidemiological characteristics of adult patients diagnosed with a shoulder pathology, who visited the PTD of the Parmenio T. Piñero Hospital(HGAPP) in a one-year period.

Material and Methods

A descriptive, cross-sectional, and retrospective study was carried out, in which a search of the PTD database of the HGAPP was conducted, selecting the PT

[1]Hospital P . Piñero, Clínica Santa Catalina, University of Buenos Aires, Fundación Favaloro.

Address of Correspondence
Dr. Muhafara,
Hospital P . Piñero, Clínica Santa Catalina, University of Buenos Aires, Fundación Favaloro.
Email: muhafara@gmail.com

files of patients with a shoulder pathology who had a medical consultation in a one-year term. Data was collected during August 2016.

Patients aged ≥18 years with a medical diagnosis of shoulder pathology were included, whose date of medical consultation was between June 1, 2015 and May 31, 2016. Patients with shoulder pathology who were undergoing PT treatment at the time of data collection were excluded.

The PTD Service of the HGAPP has eight cabinets equipped with stretchers, physiotherapy equipment, two gymnasiums, and a professional team of 21 physical therapist. The prevalence of musculoskeletal disorders of the shoulder was calculated as the ratio between cases (numerator) and population (denominator) [6].

The following variables were obtained from the PT files: age expressed in years; gender; occupation; nationality; personal history and/or current illness, skilled hand, date of entry and exit to PTD, complementary studies, evolution of the pathology, expressed in months; pain at rest and during activity as well as the presence of nocturnal pain.

Pain at the beginning and at the end of the treatment was assessed by using the Numeric Visual Analog Scale (NVAS). This tool is a simple 11-point numeric scale, based on which patients select a number from 0 to 10 that best reflects the intensity of their pain, where 0 represents "no pain", and 10, "worst pain" [7].

Regarding its evolution, for study and analysis purposes, pain was divided into three categories according to Reilingh et al: acute (less than six weeks), subacute (six to twelve weeks), and chronic (more than three months) [8].

Musculoskeletal disorders of the shoulder were classified based on the classification proposed by Frau-Escales et al [6]:

1. Traumatism: includes both fractures and dislocations. Dislocations have been considered a trauma, since the documentation did not specify any other cause.
2. Subacromial syndrome: includes both tendinopathies and total or partial torn of the rotator cuff.
3. Glenohumeral disorder: includes the diagnosis of bursitis and adhesive capsulitis.
4. Acromioclavicular syndrome.
5. Nonspecific: includes diagnoses in which only symptoms such as painful shoulder, joint pain of shoulder, or simply shoulder pain are described.

Statistical analysis: Those continuous variables whose distribution was normal were expressed as average and standard deviation (DS). Otherwise, they were reported with median and interquartile range (RIQ). In turn, the categorical variables were reported with their absolute number of presentation and percentage (%). Microsoft Office Excel 2007 was used for the purposes of analyzing the data collected.

TABLE 1. Demographic characteristics of patients with a shoulder pathology

Patients' characteristics = 143
Prevalence of shoulder pathologies (%) 10.05 %
Age
Average (±DS) 52. ± 16.74
Gender n (%)
Female 81 (56.64%) Male 62 (43.36%)
Nationality n (%)
Argentine Bolivian Paraguayan Others 87 (60.84%) 20 (13.99%) 15 (10.49%) 21 (14.68%)
Occupation n (%)
Housewives Unrecorded data Retirees Housekeepers Others 29 (16.78 %) 20 (13.99%) 12 (8.39%) 11 (7.69%) 71 (49.65%)
Evolution of pain n (%)
Acute Subacute Chronic 35 (24.47%) 43 (30.07%) 35 (24.47%)

Results

During the period covered by the study, a total of 1423 patients had medical consultations with the PTD, with a prevalence of shoulder pathologies of 10.05% (143/1423). This alteration represented the fourth cause of consultation after cervical spine, lumbar spine, and knee disorders.

With regard to the demographic characteristics of the sample, an average age of 52.9 ± 16.74 was observed, where the female gender prevailed (Table 1). This higher percentage of women was evidenced as from the age of 40, and increased in the case of individuals older than 70 years of age (Figure 1).

Concerning the occupations of the patients who had medical consultations, they were registered in 86 % of cases, the most common being housewives (20.28 %), followed by retirees (8.39 %), and housekeepers (7.69%). In turn, 60.84 % of the patients included in the sample were of Argentine nationality. Taking into account the evolution of pain, the subacute type prevailed (with 30.07 %), followed by acute and chronic pain (both with 24.47 %), whereas data on 20.98 % of the patients included in the sample were not recorded (Table 1).

The most prevalent medical diagnosis was subacromial syndrome (53.85 %), followed by trauma conditions (21.68 %), nonspecific pathologies (13.29 %), glenohumeral disorder (7.69 %), and acromioclavicular syndrome (1 %)(Figure 2). Within the subacromial syndrome, the predominant diagnoses were Tendinopathies, Subacromial Friction Syndrome and Partial Torn of the Rotator Cuff, with 44 %, 38 %, and 17 %, respectively

With regard to trauma conditions, fractures were the most common (87 %), the great majority of proximal humerus, and almost 70 % were sustained by women older than 60 years of age. The most frequent mechanism of injury was falls from standing position.

In the subgroup of nonspecific origin, the diagnoses of omalgia (pain in the shoulder) were the most prevalent (84 %). In this group of patients, a greater use of medication was registered as an additional aid to the treatment with respect to the other categories In addition, only two patients received a registered PT diagnosis

In relation to the glenohumeral disorder group, 100 % of the patients who had consulted were diagnosed with capsulitis: mostly 50-year-old women on average.

It is worth noting that 2.8 % of patients

entered with a medical diagnosis of arthrosis, and were not included in this classification

Furthermore, 52 % of the patients included in the sample discontinued treatment, out of which 53 % were women. On the other hand, 41 % of the patients were discharged due to good evolution. Almost half of this subgroup underwent kinesiology therapy during the first months of the onset of symptoms. In 4 % of cases, no data were recorded regarding discharge conditions, while the remaining patients were discharged for travel reasons or after having completed a 10-session treatment, as prescribed by the Healthcare Plan (PAMI) (Figure 3).

At the first session of treatment, pain, as measured through the numeric visual analog scale, was experienced by 51.75 % of patients (74/143): in most cases, pain at rest was rated as 0, and pain during activity was rated as 6. On the contrary, at the end of the treatment, pain was recorded in very few cases (5 %), regardless of the reason for discharge. With respect to the presence of nocturnal shoulder pain in the population, it was recorded in only 20 % of the cases.

Discussion

In the present study, it was observed that shoulder pathologies are one of the reasons for frequent consultation by patients who visit the Kinesiology Service of the HGAPP. The demographic variables recorded (including age and gender) are in line with those reported in international literature [1,6,9].

One of the reasons why the prevalence of musculoskeletal shoulder disorders is higher in women may be because they use health services much more frequently in all age groups [6]. In turn, Strazdins et al. suggest two theories relating to this preponderance of female patients: one, women may be more likely to develop musculoskeletal disorders due to biological factors linked to hormonal or physiological changes; two, there may be more women with paid jobs, like men, but who also have a leading role in household tasks [10].

When analyzing the distribution by gender and age, it can be observed that this increase in the female preponderance is greater in the group of women over 70 years.This could be due to the fact that women, over time, suffer from changes typical of their gender, which expose them to a higher probability of suffering from a musculoskeletal disorder compared with men.

In the present study, the tendency is reversed in the group of patients who are 20-29 years of age, where the shoulder pathology is predominant in men. This is in line with what was published by Frau-Escales et al [6], which can be explained by the association of this subgroup with high energy trauma. A proof of this is that in our study, almost 60% of the men who consulted were diagnosed with a trauma pathology.

According to international literature, there is a strong link with the work activity as a risk factor for musculoskeletal disorders [6], among others, repetitive movements of the upper limb above the head, vibratory movements, manual tasks and/or maintaining uncomfortable postures [2].

In the present study, housewives showed the highest number of diagnoses of shoulder pathology. This activity is usually not considered as a risk factor, since it is not defined as a profession, but it implies certain movements similar to those described as ways to injure the shoulder joint. In our sample, the data relating to the work activity was not complete in all cases, which is relevant since it has a causal association with musculoskeletal disorders of the shoulder.

The classification used to categorize the sample

according to the different diagnoses was that published by Frau- Escales et al [6]. It was chosen because it adapts well to the characteristics of the HGAPP population, irrespective of the fact that it originates in a study done in the population of a Primary Health Care Center.

The most prevalent pathology with medical diagnosis was the Subacromial Syndrome, unlike the pathology published by Frau-Escales et al., who reported non-specific shoulder pain [6] as the most frequent reason for consultation.

With regard to the Subacromial Syndrome, 83.12% correspond to patients over 40 years of age. According to Terri et al, [11] rotator cuff conditions predominate in this age group, due to the natural degenerative process of the tissues, the lower vascularization and the decrease in tendon tensile strength. Similarly, Yamamoto et al agree that from the age of 40, the chances of suffering from subacromial syndrome double each decade to the point that half of the people in their eighties suffer from this condition. It should be clarified that this author specifically describes tendon injuries in the rotator cuff [12]. In contrast, Greving et al mention a cutoff point of more than 65 years of age as a predisposing factor for rotator cuff injury, also due to degenerative processes [1].

As regards trauma conditions, the high prevalence of proximal humerus fractures in women older than 60 years of age is in line with the literature, which reports a women-to-men ratio of 2:1. This could be linked to bone density, since elderly population [13] has the highest incidence of fractures.

With regard to nonspecific disorders, an inaccurate diagnosis could be due to the lack of clear signs or symptoms to identify a pathology for sure. In relation to glenohumeral disorders, all those registered were adhesive capsulitis conditions, mostly in women with an average age of 50. This is in line with the literature, which reports an age range between 40 and 65 [11]. Finally, our lower prevalence of acromioclavicular syndrome also agrees with what was published by Frau-Escales et al [6].

It should be clarified that there were four patients with a diagnosis of osteoarthritis, which were not included in the classification of Frau-Escales et al [6]. Therefore, they were not considered in any specific subgroup, but they were taken into account for data analysis purposes.

With regard to the high abandonment rate recorded in the study, it is important to note that 74 % of the patients were actively working. The psychosocial factors of the patients were not registered, and this places a limit to the better interpretation of the possible causes of abandonment.

There are considerable levels of treatment abandonment and daily absences, with the following population profile: female patients, patients in their forties, patients who are household workers and patients residing far from the healthcare center. The early abandonment was a constant for those who did not finish the treatments and the socioeconomic conditions were decisive

when deciding whether treatment should continue. However, there is no contact information of patients to assess what their condition was at the time they were discharged[14].

The present study found that the majority of the discharged patients due to good progress, then consulted during the first three months of the onset of the symptoms. As mentioned in the Dutch Guide to Diagnosis and Treatment of Subacromial Pain Syndrome, there is a link between the longer duration of shoulder pain (> 3 months) and negative prognostic factors [16].Early diagnosis and appropriate treatment help to improve painful symptoms, optimize shoulder function and reduce the risk of disability in the long term [16]. At the same time, there are studies that show that patients receiving PT rehabilitation within a time period for progress of the pathology of less than four weeks obtained satisfactory results [4].

As regards pain, the low number of measurements through NVAS at the end of treatment is mostly due to the high abandonment rate. In the case of discharges due to good progress, NVAS measurements were also low. As previously mentioned, the literature considers pain as one of the three most prevalent symptoms of musculoskeletal disorders [4], so we believe it would be important use this variable as benchmark at the beginning and end of treatment.

A total of 21 patients with night pain due to a shoulder disorder were registered, where 90.48% was due to subacromial syndrome. Night pain, defined as a pain that usually increases at night and even awakens the individual [17], according to the literature, is also predominant in subacromial syndrome and prevents individuals from sleeping on the affected side [11]. It is important to be able to record this variable, since together with the semiological tests and the image studies, are typical of this population.

Limitation of the study

The lack of collection in full of certain variables could have impacted the results, possibly due to the retrospective design of the study.

Conclusion

This study enabled us to know the epidemiological characteristics of adult patients with a shoulder pathology, who visited the Outpatient Kinesiology Service of the HGAPP in a one-year period.

Given the lack of records of the different variables gathered, we believe it is advisable to design and implement a shoulder evaluation form.

References

1.Greving K, Dorrestijn O, Winters JC, Groenhof F, Van der Meer K, Stevens M et al. Incidence, prevalence, and consultation rates of shoulder complaints in general practice. Scand J Rheumatol. 2012, 41 150 -155

2.Linaker CH, Walker-Bone K. Shoulder disorders and occupation. Best Practice&Research Clinical Rheumatology. 2015, 41 1 -19

3.Hopman K, Krahe L, Lukersmith S, McColl AR, Vine K. Clinical Practice Guidelines for the Management of Rotator Cuff Syndrome in the Work place. 2013.

4.Ferreiro Marzoa I, Veiga Suárez M, Guerra Peña JL, Rey Veiga S, Paz Esquete J, Tobío Iglesias A. Tratamiento rehabilitador del hombro doloroso. Rehabilitación (madr). 2005, 3 113 -20

5.Mitchell C, Adebajo A, Hay E, Carr A. Shoulder pain: diagnosis and management in primary care. BMJ. 2005, 331 1124 -8

6.Frau-Escales P, Langa-Revert Y, Querol-Fuentes F, Mora-

7.Amérigo E y Such-Sanz A. Trastornos músculoesqueléticos del hombro en atención primaria. Estudio de prevalencia en un centro de la Agencia Valenciana de Salud. Fisioterapia. 2013;35(1):10-17. 7.Gillian AH, Mian S, Kendzerska T, French M. Measures of Adult Pain. Arthritis Care&Research. Vol. 63, No. S11, November 2011, pp S240 –S252.

8.Reilingh ML, Kuijpers T, Tanja-Harfterkamp AM, van der Windt DA. Course and prognosis of shoulder symptoms in general practice. Rheumatology. 2008, 47 724 -300

9.Niels GJ, Natvig B. Shoulder diagnoses in secondary care, a one year cohort. Juel and Natvig BMC Musculoskeletal Disorders. 2014, 15:89.

10.Strazdins L, Bammer G. Women, work and musculoskeletal health. Social Science& Medicine. 2004, 41 997 -1005

11.Terri SM, Lee Osterman A, Fedorczyk JM, Amadio PC. Rehabilitation of the hand and upperextremity.2011; Volume 1. Sixth edition. Mosby.

12.Yamamoto A, Takagishi K, Osawa T, Yanagawa T, Nakajima D, Shitara H et al. Prevalence and risk factors of a rotator cuff tear in the general population. J Shoulder Elbow Surg. 2010; 19, 116-120.

13.Egol KA,Koval KJ,Zuckerman JD. Manual de fracturas. 4th. Ed. Wolters Kluwer Health Lippincott Williams&Wilkins; 2011.

14. Gonz lez FA. Analysis of adherence to kinesiology treatments. Professional Organization of Kinesiologists of the Province of Buenos Aires, Year 7, Number 26 - April/June 2008.

15.Diercks J, Bron C, Dorrestijn O, Meskers C, Naber R, de Ruiter Tjerk et al. Guideline for diagnosis and treatment of subacromial pain. A multidisciplinary review by the Dutch Orthopaedic Association. Acta Orthophaedica. 2014; 85(3):314- 322.

16.Vicente-Herrero MT, Capdevila García L, López Gonzálezc ÁA, Ramírez Iñiguez de la Torred MV. El hombro y sus patologías en medicina del trabajo. SEMERGEN. 2009; 35(4):197-202.

17.Gomoll AH, KatzJN, Warner JJP, Millett PJ. Rotator Cuff Disorders Recognition and Management Among Patients With Shoulder Pain. Arthritis&Rheumatism. Vol. 50, No. 12, December 2004, pp 3751–3761

Conflict of Interest: – NIL
Source of Support: NIL

How to Cite this Article

Jorge MG, Javier CA, Ariel WT, Matias V, Virgilio, Sacha V, Alfredo AM, Francisco EL. Prevalence of musculoskeletal disorders of the shoulder in a Hospital of the City of Buenos Aires. Retrospective study. Prevalence of musculoskeletal disorders of the shoulder in a Hospital of the City of Buenos Aires. Retrospective study. Acta of Shoulder and Elbow Surgery July - Dec 2017;2(2):20-23