International Journal of Research in Medical Sciences
Singh S et al. Int J Res Med Sci. 2015 Apr;3(4):917-920
www.msjonline.org
pISSN 2320-6071 | eISSN 2320-6012
DOI: 10.5455/2320-6012.ijrms20150419

Research Article

Prevalence of shoulder disorders in tertiary care centre

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Received: 10 February 2015
Accepted: 03 March 2015

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ABSTRACT

Background: Shoulder pain is the third most common musculoskeletal condition has a lifetime prevalence of up to 70% and this seems to be increasing in incidence. The diagnosis of these disorders is based primarily upon results of clinical tests. The prevalence of shoulder pain in India has not been reported. The aim of present study is to study and report the prevalence of various disorders causing shoulder pain in patients reporting to a tertiary care hospital in North India.
Methods: This is a prospective hospital based cross-sectional study carried in a tertiary care hospital and 130 patients satisfying inclusion criteria over a period of two year were included.
Results: Age of patients ranged between 23-69 years (51.36 ± 11.86 years). A predominance of females was observed (Male-Female ratio: 0.81:1). The commonest cause of pain was periarthritis shoulder (43.1%), subacromial (SA) impingement (13.8%), acute rotator cuff injury (13.1%), GH arthritis (10.0%) and AC Arthritis (8.5%). The major risk factors were diabetes mellitus, excessive overhead lifting and trauma.
Conclusion: Periarthritis and subacromial pain syndrome are two most common diagnoses reporting to a tertiary care centre. Periarthritis is the commonest diagnosis in both genders. AC arthritis is more common in females (P <0.001) and rotator cuff injury is more in males (P <0.001). Periarthritis, GH arthritis and AC arthritis is much more common in fifth and sixth decades and rotator cuff injury is seen in young adults.

Keywords: Prevalence, Shoulder pain, Periarthritis, Glenohumeral arthritis, Rotator cuff injury

INTRODUCTION

Shoulder pain is the third most common musculoskeletal condition. The reported annual incidence of shoulder pain in primary care is 14.7 per 1000 patients per year with a lifetime prevalence of up to 70%.[1,2] In the community as many as 20% of the adult population experience shoulder symptoms at any one time and this seems to be increasing in incidence.[3,4] Most common causes of shoulder pain in primary care are reported to be rotator cuff disorders, acromioclavicular joint (AC) disorder and glenohumeral joint (GH) disorders.[5] The diagnosis of these disorders is based primarily upon results of clinical tests.[6-9]

Aims and objectives

The aim of present study is to study and report the prevalence of various disorders causing shoulder pain in patients reporting to a tertiary care hospital in north India.

METHODS

Study design and patient selection: This is a prospective hospital based cross-sectional study carried in department of orthopedics of a tertiary care hospital catering suburban and rural population of Lucknow. The study was done after clearance and approval from the

institutional ethical committee. A written and informed consent was obtained from all the subjects.

Patients presenting with stiffness, swelling or pain with or without a history of trauma to shoulder of more than 3 months were included. Patients with trauma to shoulder of less than 3 months duration, history of infection in or around shoulder joint, cervical spondylosis, cervical pain with or without radiculopathy, previous surgical intervention to shoulder joint, shoulder problems secondary to neurological, vascular, systemic diseases and traumatic (fractures/dislocations) to the same limb were excluded from the study.

After enrolment of the case in the study a detailed history was taken and clinical examination was done along with recording of demographic information. Specific shoulder tests were done wherever needed. Investigations like radiography, ultrasonography (USG), Computed Tomography (CT) and/or Magnetic Resonance Imaging (MRI) was done to confirm the diagnosis wherever indicated. Arthrography, arthroscopy and local diagnostic injections were performed in relevant cases. Final diagnosis was made after correlation with results of all tests.

RESULTS

All patients attending the department within 2 years duration with shoulder pain were included in the study. A total of 783 patients attended our orthopaedics outpatients department with neck and upper back pain radiating to shoulder and shoulder pain of more than 3 months duration. Of all these patients 296 had signs and symptoms pertaining to cervical pathology (cervical disc disease and cervical spondylosis), and 357 patients had fibromyalgia/fibrofascitis of upper back and scapular region and hence excluded from the study. Rest 130 patients fulfilling the inclusion criteria were included in the study. Age of patients ranged between 23-69 years (51.36 ± 11.86 years). A predominance of females was observed (Male-Female ratio: 0.81:1) (Table 1).

Table 1: Clinical diagnosis, mean age, and gender of study patients.

Diagnoses	Patients (n=130)	Females (n=72)	Males (n=58)	Mean age (years)	Male vs. Female	
					X^2	P
Periarthritis	56 (43.1%)	35 (48.61%)	21 (36.20%)	51.4	2.016	0.156
Subacromial Impingement	18 (13.8%)	08 (11.11%)	10 (17.24%)	49.4	1.012	0.314
Rotator cuff injury	17 (13.1%)	01 (01.38%)	16 (27.58%)	28.3	19.395	<0.001
Glenohumeral arthritis	13 (10.0%)	08 (11.11%)	05 (08.62%)	51.2	0.221	0.638
Acromioclavicular Arthritis	11 (08.5%)	10 (13.88%)	01 (01.72%)	52.7	6.137	0.013
Miscellaneous Group	15 (11.5%)	10 (13.88%)	05 (08.62%)	42.8	0.873	0.350

The commonest cause of shoulder pain is given in Table 1. They are periarthritis shoulder (43.1%) followed by subacromial (SA) impingement (13.8%), acute rotator cuff injury (13.1%), GH arthritis (10.0%), AC Arthritis (8.5%) and miscellaneous group (myalgia, cases with unclear diagnosis etc.) (11.5%). Gender and age wise distribution of patients is shown in Table 1 and Table 2.

Table 2: Association of diagnosis with age.

Age group		Periarthritis shoulder n (%)	SA impingement n (%)	Rotator cuff injury n (%)	GH arthritis n (%)	AC arthritis n (%)	Misc. n (%)
21-30 years		-	-	13 (76.47)	-	-	03 (20.00)
31-40 years		03(5.36)	03 (16.67)	04 (23.53)	01 (07.69)	-	02 (13.33)
41-50 years		35 (62.50)	07 (38.89)	-	03 (23.08)	04 (36.36)	06 (40.00)
51-60 years		10 (17.86)	06 (33.33)	-	06 (46.15)	06 (54.55)	04 (26.67)
>60 years		08 (14.29)	02 (11.11)	-	03 (23.08)	01 (09.09)	-
Age >50 years		18 (32.14)	08 (44.44)	(0)	09 (69.23)	07 (63.63)	04 (26.67)
Age <50 vs.	X^2	0.452	0.750	10.71	7.237	4.195	0.564
>50 years	P	0.501	0.386	0.001	0.007	0.041	0.453

Risk factors: The major risk factor was diabetes mellitus in periarthritis shoulder (67.86%). Excessive overhead lifting was major risk factor associated with glenohumeral arthritis (30.77% cases), subacromial impingement (77.78% cases) and ACJ arthritis (90.91% cases). In cases of rotator cuff injury (100.0%) trauma was the only risk factor. Majority of patients with glenohumeral arthritis had no associated significant risk factor. Association of risk factors and cause of shoulder pain was statistically significant (P <0.001).

Duration of pain: Duration of pain before seeking medical help was maximum in patients diagnosed with glenohumeral arthritis (19.23 ± 3.81 months) followed by rotator cuff injury (14.40 ± 6.36 months) and ACJ arthritis (13.36 ± 3.11 months).

DISCUSSION

The cause of shoulder pain in India has been reported as one of the major work related musculoskeletal complaints.[10-12] The prevalence of shoulder pain in India has been reported to be 2% (urban) and 7.4% (rural) population.[13,14]

This study was undertaken to study common shoulder disorder patients reporting to an out-patient department of orthopaedic department of a tertiary care hospital (medical college). Detailed online search did not reveal any such study done and reported from India. However, our data is the first report of shoulder disorders reporting to a tertiary care centre.

In our study all cases having pain of less than 3 months duration and successfully treated by short course of NSAID's and rest were excluded to avoid confounding factors of minor soft-tissue pathologies which are quite common and get resolved with drugs (NSAID's) and rest to the limb within a week or so.

There have been only few studies done in past reporting the prevalence of shoulder disorders. These were done in primary or secondary care centre involving number of investigators working in different hospitals and the data obtained from their respective clinics were simply clubbed and reported.[1,16,17] The results in these studies vary much due to fact that they were diagnosed by general practitioners and also because the disease definition itself in certain cases is ambiguous.

Periarthritis or adhesive capsulitis was the most common diagnosis (43.1%) in our study. Our results are more close to that reported by Walker-Bone who reported 55% of cases as periarthritis in his study.[17] Most of the studies have reported subacromial pain syndrome as the most common cause of pain ranging from 30% to 86% of cases but we found subacromial pain in only 13.8% cases.[1,16-18]

The three previous studies reporting results of primary care centre population do not mention rotator cuff injury or GH arthritis as cause of shoulder pain.[1,16,17] GH arthritis was seen in 10.0% of cases and rotator cuff injury was 13.1% in our study which is slightly higher than reported by other worker.[18] But this agrees well with the fact that we expect a higher proportion of cases with a definite diagnosis in patients referred to a tertiary care centre as compared to a primary and secondary care centre.

The reasons of this difference may be multifactorial: a) multiple investigators vs. single investigator, b) level of health care facility: primary care vs. tertiary care hospital (medical college), b) skill levels of the investigator: generalist vs. orthopaedics specialists, c) Study design: survey questionnaire vs. proper detailed clinical examination and investigations and also d) varying diagnostic terminology.

Gender wise in males the prevalent cause of shoulder pain was periarthritis (36.20%) followed by rotator cuff injury (27.58%) and subacromial impingement (17.24%) and the difference was statistically significant only in case of rotator cuff injuries (Table 1). While in females the prevalent cause of shoulder pain was again periarthritis (48.61%) followed by ACJ arthritis (13.8%) and GH arthritis and subacromial impingement (11.11%) difference was statistically significant in ACJ arthritis only (Table 1). Periarthritis was the cause of shoulder pain in nearly half (48.61%) of the female patients in this study.

Age-wise most cases of rotator cuff injury (76.47%) were young adults in 21-30 year age group while majority of cases of periarthritis, glenohumeral arthritis, AC arthritis, subacromial impingement, shoulder were seen in fifth to sixth decade with significant association of diagnosis and age. This has been also reported in other studies.[19-21]

Duration of pain before seeking help was maximum in GH arthritis (19.23 ± 3.81 months) patients followed by AC arthritis (13.36 ± 3.11 months). The mean duration of pain reported in a study done in primary care was 10 weeks and that done in secondary care was 26 weeks. This simply implies that patients reporting to a tertiary centre usually seek help at primary and secondary care facility first. The clinical utility of this study may not be great but still our data is the first of it's kind reported in India and needs to be documented.

CONCLUSION

This is the first report on prevalence of shoulder pain disorders reporting to a tertiary care centre, especially age and gender related prevalence. Our study has shown periarthritis and subacromial pain syndrome are two most common diagnoses reporting to a tertiary care centre.

Periarthritis is the most common diagnosis in both males and females. AC arthritis is more common in females (P <0.001) and rotator cuff injury is more in males (P

<0.001). Periarthritis, GH arthritis and AC arthritis is much more common in fifth and sixth decades.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the institutional ethics committee

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DOI: 10.5455/2320-6012.ijrms20150419
Cite this article as: Singh S, Gill S, Mohammad F, Kumar S, Kumar D, Kumar S. Prevalence of shoulder disorders in tertiary care centre. Int J Res Med Sci 2015;3:917-20.