

Pain clinic experience in a teaching hospital in Western, Saudi Arabia

Relationship of patient's age and gender to various types of pain

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ABSTRACT

Objectives: To show the practice of a pain clinic in Saudi Arabia, to estimate the prevalence of various types of chronic pain managed in there and to find the relationship of patient's age and gender to type of pain.

Methods: A retrospective study was carried out over a period of 5 years (January 2000 - December 2004) at a teaching hospital in Jeddah. A total of 1686 patient's data was reviewed, including the giving diagnosis, types of pain and demographic data.

Results: The common age was 50-59 years (25.4%), with a preponderance of female (56.8%) over male (43.2%). For given diagnosis low back pain (LBP) was the most common (45.4%), followed by painful neuralgia (15.6%), headache (9.7%), cancer pain (8.7%), and cervicobrachialgia (8.1%). The prevalence of fibromyalgia (7.9%), headache (12.1%)

and cervicobrachialgia (10.7%) was more common among female, in comparison to male (2.4%), (6.4%) and (4.7%) respectively. While painful neuralgia was more frequent among male (19.9%) than female (12.3%), ($p < 0.001$). Low back pain showed higher prevalence among old patients, while headache and sickle cell disease were more common among younger age group. Combined nociceptive and neuropathic pain was the most common pathophysiological type observed (39%), followed by nociceptive pain (36.2%) and the least one was psychological pain (2.7%).

Conclusion: Various types of chronic pain managed in the pain clinic requesting full understanding of pain neurophysiology as well as familiarity with contributing factors to the prevalence of pain.

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Despite significant advances in medicine and the treatment of diseases, chronic pain remains an enigma that health care professional often manage poorly.¹ Pain clinics are the site for referral of chronic pain patients for treatment. Usually they are run by a group of clinicians whose common interest is pain and its management. They might differ considerably in their properties, but their main function is to evaluate the nociceptive, neuropathic and psychological aspects of chronic pain and ensure adequate treatment of it.² In Saudi Arabia, the pain clinics are a newly

born medical entity. Literature review reveals little or no information about chronic pain management in Saudi Arabia. Neither the pain's condition managed in the clinics, nor the character of patients referred to these clinics has been reviewed. Our study was designed to show the practice of a chronic pain clinic in a tertiary center in Saudi Arabia, to estimate the prevalence pattern of various types of chronic pain managed in there and to correlate their relation to the patient age and gender among a sample of Saudi population.

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Methods. Following our institutional Ethics Committee approval, a retrospective study was conducted. The computer data of all patients attending the pain clinic at King Abdulaziz University Hospital in Jeddah, Saudi Arabia over a 5-year period between January 2000 and December 2004 were reviewed. King Abdulaziz University Hospital is 590 beds with 20,000 outpatient visits annually. The pain clinic is multidisciplinary clinic ran by a consultant anesthesiologist specialized in pain medicine on a weekly basis. Data concerning demographic characters, given diagnosis, and pathophysiological type of pain whether nociceptive, neuropathic, or psychological one was documented in the hospital information system at the end of each visit. Unfortunately, full pain history was not included in the computer system.

All statistical procedure was performed using SPSS® statistical software (SPSS Inc., Chicago, IL, USA), version 10 for Windows. Chi square test was used to search for statistical significance and compare the qualitative data. A *p* value of <0.001 was considered statistically significant. Results throughout the text and tables were presented as number or percentage unless otherwise specified.

Results. A total number of 1773 patients were managed over 190 sessions of pain clinic in a period of 5 years. The data of 86 patients was dismissed from the study due to considerable lack of information. The demographic characteristic of patients was shown in **Table 1**, with one quarter of patients (25.4%) was in the age group (50-59 years), and the mean age was

49.3 ± 15.8 years. The range of ages managed in the pain clinic was a wide one (<1 year to 100 years). There was a slight preponderance of females (56.8%) over males (43.2%) and a slightly more Saudi patient (51.4%) than Non Saudi patients (48.6%). According to the given diagnosis, 9 chronic pain conditions were managed in the pain clinic. The most common pain was low back pain (LBP), as half of patients assessed in the clinic were complaining of LBP (45.4%), followed by painful neuralgia (15.6%), headache (9.7%), cancer pain (8.7%), neck and shoulder (cervicobrachialgia) pain (8.1%), fibromyalgia (5.5%), other types (3.2%), facial pain (2.7%) and finally sickle cell disease patients (1.1%). The relationship between each type of pain and patient's gender was presented in **Table 2**. The prevalence of fibromyalgia was markedly higher among female patients (7.9%), if compared to males (2.4%), also, headache and cervicobrachialgia pain was more prevalent among female patient (12.1%) and (10.7%), in comparison to males (6.4% and 4.7%), while chronic painful neuralgia was higher among male patients (19.9%) if compared to females (12.3%), (*p*<0.001, Chi Sq = 87.858, degree of freedom [df]=8). Gender appeared to be of little importance to LBP.

Table 3 revealed the relationship between age and various chronic pain syndromes. There was a stepwise increase in the prevalence of LBPs towards older ages, it ranged between 21.4% among patients aged <30 years until it reached 63.3% among patients aged 60-69 years, followed by slight decline among those ≥70 years (59.5%). On the other hand, headache was less frequent complain among old age patients,

Table 1 - Demographic characteristics of the patients (n=1686)

Characteristics	n	(%)
Age (years)		
<30	192	(11.4)
30-39	284	(16.8)
40-49	335	(19.9)
50-59	429	(25.4)
60-69	283	(16.6)
≥70	163	(9.7)
Gender		
Male	729	(43.2)
Female	957	(56.8)
Nationality		
Saudi	867	(51.4)
Non-Saudi	819	(48.6)

Table 2 - Common chronic pain conditions and their relation to patient gender (n=1686).

Preliminary diagnosis	Gender				Total	
	Females		Males		n	(%)
	n	(%)	n	(%)	n	(%)
Facial pain	27	(2.8)	19	(2.6)	46	(2.7)
Cancer pain	91	(9.5)	55	(7.5)	146	(8.7)
Fibromyalgia	76	(7.9)	17	(2.4)	93	(5.5)
Headache	116	(12.1)	47	(6.4)	163	(9.7)
Low back pain	395	(41.3)	371	(50.9)	766	(45.4)
Neck and shoulder pain	102	(10.7)	34	(4.7)	136	(8.1)
Other types	26	(2.7)	28	(3.8)	54	(3.2)
Painful neuralgia	118	(12.3)	145	(19.9)	263	(15.6)
Sickle cell disease	6	(0.6)	13	(1.8)	19	(1.1)
Total	957	(100)	729	(100)	1686	(100)

Table 3 - Common chronic pain conditions and their relation to patient age (n=1686).

Preliminary diagnosis	Age groups (years)							Total
	<30	30-39	40-49	50-59	60-69	≥70		
Facial pain	6 (3.1)		4 (1.2)	23 (5.4)	10 (3.5)	3 (1.8)	46 (2.7)	
Cancer pain	11 (5.7)	28 (9.9)	33 (9.9)	34 (7.9)	30 (10.6)	10 (6.1)	146 (8.7)	
Fibromyalgia	14 (7.3)	19 (6.7)	39 (11.6)	15 (3.5)	5 (1.8)	1 (0.6)	93 (5.5)	
Headache	53 (27.6)	47 (16.5)	50 (14.9)	9 (2.1)		4 (2.5)	163 (9.7)	
Low back pain	41 (21.4)	107 (37.7)	118 (35.2)	224 (52.2)	179 (63.3)	97 (59.5)	766 (45.4)	
Neck & shoulder pain	2 (1)	24 (8.5)	39 (11.6)	51 (11.9)	12 (4.2)	8 (4.9)	136 (8.1)	
Other types	9 (4.7)	14 (4.9)	11 (3.3)	8 (1.9)	8 (2.8)	4 (2.5)	54 (3.2)	
Painful neuralgia	43 (22.4)	39 (13.7)	41 (12.2)	65 (15.2)	39 (13.8)	36 (22.1)	263 (15.6)	
Sickle cell disease	13 (6.8)	6 (2.1)					19 (1.1)	
Total	192 (100)	284 (100)	335 (100)	429 (100)	283 (100)	163 (100)	1686 (100)	

Data are expressed as number (%)

Table 4 - Pathophysiologic type of pain and their relation to gender.

Pathophysiologic type of pain	Gender		Total
	Females	Males	
Neuropathic	184 (19.2)	188 (25.8)	372 (22.1)
Psychological	25 (2.6)	20 (2.7)	45 (2.7)
Nociceptive	386 (40.3)	225 (30.9)	611 (36.2)
Both	362 (37.8)	296 (40.6)	658 (39)
Total	957 (100)	729 (100)	1686 (100)

Data are expressed as number (%)

it ranged between 27.6% among patients aged <30 and 2.1% among those aged 50-59 years. Sickle cell disease patients suffering from pain were <40 years. The overall differences in the preliminary diagnoses of pain according to age groups was statistically significant ($p<0.001$, $df=8$, $Chi Sq=87.858$). The classification of chronic pain according to the pathophysiological cause of pain was as follows nociceptive pain constituted more than one third of all cases (36.2%), while neuropathic pain was diagnosed in 22% and psychological pain was the least recorded type of pain (2.7%). The most common picture of chronic pain was the combination of nociceptive and neuropathic pain (39%). The relationship between pathophysiological causes of chronic pain and gender was shown in **Table 4**, while their relationship to age was shown in **Table 5**. Neuropathic pain was higher among males (25.8%) than females (19.2%), while,

it was obvious that nociceptive pain was more among females (40.3%) if compared to males (30.9%). These differences were statistically significant ($p<0.001$, $df=3$, $Chi Sq=19.160$). Also, neuropathic pain was higher among young age group <30 years when compared to other age groups, while the nociceptive pain was diagnosed in 24.5% of the young age group <30 years and 43.7% of the 30-39 years age group. This high prevalence level was followed by gradual decrease towards older age groups until it reached 27% among geriatric patients >70 years. Psychological pain was reported among a relatively younger age group (<50 years), the highest prevalence was recorded among patients aged <30 years, followed by sharp drop in the prevalence among the older patients ($p<0.001$, $df=15$, $Chi Sq=185.58$). The difference in the pathophysiological types of pain according to gender was statistically significant ($p<0.001$, $df=3$, $Ch Sq=19.16$).

Discussion. Chronic pain clinic and the management of chronic pain are a new concept to the medical field in Saudi Arabia. Literature review revealed limited conduction of studies among Saudi patients assessing the prevalence of various types of chronic pain and relating them to the age and gender of patients. In our study, we tried to find the answer for such questions. From the wide range of ages referred to the pain clinic, most of patients were in the age group 50-59 years and the majority of them were female. The slight preponderance of females (56.8%) over males (43.2%) in the study group could be related to the fact that women sought medical advice more than men,³ more sensitive to

pain than males,^{4,5} or to the existence of biological variation in the nociceptive and perceptual system among the 2 groups.^{6,8} The presence of more Saudi patients attending the pain clinic than Non-Saudi is mainly related to the limited access of Non-Saudi to governmental hospital and it is unlikely to have any scientific background. Chronic pain was classified according to the given diagnosis into 9 general pain conditions. Low back pain was the most commonly encountered pain condition referred to the pain clinic. This finding was opposite to Sternbach's report in which American people suffered from headache at higher rate than backache.⁹ The difference between findings of the 2 studies might be related to higher prevalence rate of LBP among Saudi, or more association of pain, suffering, and disability with anatomical disorder of lumbosacral spine, hip, and lower limbs changes more than headache,¹⁰ or to the routine referral of patients with LBP by orthopedic and neurosurgery doctors to the pain clinic opposite to headache which was rarely referred by neurologist and ENT doctors. Further studies are needed to estimate the prevalence of LBP and headache on wider scale involving a bigger sample of the Saudi population. Painful neuralgia was the second common painful condition seen in the clinic, then headache and others. On the other hand, the low frequency of sickle cell disease patients referred to the pain clinic (1.1%) is mainly attributed to the total responsibility of hematology department in their management. Regarding gender and the various pain conditions; fibromyalgia, headache and cervicobrachialgia were more frequent among female patients. This was similar to LeResche¹¹ study finding, regarding the epidemiology of chronic pain.^{3,11} Painful neuralgia was more common among male patients than female ($p < 0.001$) and this was mainly attributed to the various etiological factors contributing to painful neuropathies. In a country like Saudi Arabia, socio-

economical factors were considerable determinants for such differences. The limitation of out-door jobs to male, and the higher rate of trauma among Saudi males in comparison to females are some examples of these factors. On the other hand, there is a little contribution of gender to LBP and this is similar to that of Andersson's finding.¹² In summary, the noticeable gender difference in relation to the type of chronic pain could be related to many biological, developmental, psychological and socio-cultural factors that requested further detailed study to reveal the importance of each factor in relation to each type of chronic pain. The prevalence of LBP was increased with the increase in age. It ranged from 21.4% among young patient <30 years to 63.3% among those between 60-69 years, to fall down again among those >70 years (59.5%). Nachemson and Vingard¹³ in their study showed that the age between 35 and 55 years was the only predicted physical factor of LBP. Also, LBP was seen more frequent among older person as a result of the aging process of the vertebral column.¹³⁻¹⁷ The recognized fall of LBP prevalence among patients >70 years of age could be attributed to the small number of patients >70 included in the study, or to other factors that still unclear to us and further study is needed to reveal them. The pathophysiological classification of pain showed a higher number of patient complaining from both nociceptive and neuropathic type of pain (39%) which might be related to the difficulty in separating both types of pain, sharply without any overlap,¹⁸ or as a result of misunderstanding between the patient and the clinician regarding the symptoms and signs of each type of pain. Neuropathic type of pain was more common among male patients and younger age group, while the other types were more relevant finding among female patients and older age groups. Again, the higher frequency of neuropathic pain among male of younger age group is mainly related to the unique living conditions for both male and female in Saudi Arabia. The psychological type of pain was the least

Table 5 - Pathophysiological types of pain and their relation to patient age (n=1686).

Preliminary diagnosis	Age groups (years)						Total
	<30	30-39	40-49	50-59	60-69	≥70	
Neuropathic	55 (28.6)	56 (19.7)	72 (21.5)	97 (22.6)	52 (18.4)	40 (24.5)	372 (22.1)
Psychological	29 (15.1)	7 (2.5)	9 (2.7)				45 (2.7)
Nociceptive	47 (24.5)	124 (43.7)	144 (43)	165 (38.5)	87 (30.7)	44 (27)	611 (36.2)
Both	61 (31.8)	97 (34.2)	110 (32.8)	167 (38.9)	144 (50.9)	79 (48.5)	658 (39)
Total	192 (100)	284 (100)	335 (100)	429 (100)	283 (100)	163 (100)	1686 (100)
Data are expressed as number (%)							

frequent type. It occurred only in relatively younger age group and has a significant relation to both age and gender. Although low referral rate might explain the limited number of patients with psychogenic pain (2.7%) managed in pain clinic, but the difficulty in the diagnosis and assessment of psychogenic pain might contribute to that as well.

In conclusion, pain is a major concern for the patient. It is required a better understanding of biological, pathophysiological and psychological changes associated with each type of pain, to achieve proper control of it. Familiarity with various contributing factors to pain not only age and gender is needed to enhance our understanding of this complex disease and ensure adequate treatment of pain. Finally, although our study revealed some aspect of chronic pain, we still need further study to improve the knowledge of medical staffs as well as the public about pain medicine and ensure adequate management of pain in a multi disciplinary approach and a nation wide involvement.

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