Students' Corner

Original Article

The Burden of Anxiety and Depression among patients with Chronic Rheumatologic Disorders at a Tertiary Care Hospital Clinic in Karachi, Pakistan

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Abstract

Objectives: To study the burden of anxiety and depression as a comorbid among patients of chronic rheumatological disorders and to investigate possible determinants of depression and anxiety.

Methods: It was a cross-sectional study conducted at the rheumatology clinic of The Aga Khan University Hospital (AKUH) Karachi, Pakistan. With convenient sampling, 111 patients who fulfilled inclusion/exclusion criteria were screened for anxiety and depression with help of Aga Khan University Anxiety and Depression Scale (AKUADS). The data was entered and analyzed by Statistical Package for Social Sciences (Version 10.0).

Results: The population consisted mainly of middle aged (mean age 41) females (80.2%). The most common diagnosis was rheumatoid arthritis 57% followed by systemic lupus erythmatosis 17% and systemic sclerosis 9%. The permanent joint deformity was present in 33.3% patients and 36.9% patients were suffering from active disease with pain and inflammation. The frequency of anxiety and depression was 65.8%. Educational qualification, permanent joint deformity, active inflammation and time elapsed since diagnosis had significant association with anxiety and depression. Marital Status, gender, economic activity and monthly family income had no effect on the frequency of anxiety and depression.

Conclusion: Almost two third of patients with chronic rheumatological disorders, also suffered from a concomitant mood disorder. Systematic evaluation of all patients for mood disorders and psychological distress in rheumatology clinics is highly recommended (JPMA 56:243;2006).

Introduction

An association between pain and depressive symptoms has long been observed going as far back as the middle of the last century. Now there is ample evidence that psychological and social factors are important causes of disability in patients suffering from musculoskeletal pain problems.[1-3] It has also been shown that psychological co-morbidity not only causes considerable disability[4] but also predisposes to future musculoskeletal complaints.[5,6] Data also suggest that people suffering from a long term medical condition are twice as likely to suffer from major depression within the next year as compared to subjects without a chronic disorder.[7] The prevalence of mood disorders is even higher in rheumatologic subgroups than any other general medical condition.[8] In a community based study conducted in Europe, Ohayon et. al. showed that there was a high burden of depression, as a comorbid of pain and recommend that all patients with chronic painful physical conditions, should be evaluated systematically for depression.[9]

The exact prevalence of depression and anxiety in Pakistani population in general is not known. There are, however, different studies which show prevalence of anxiety and depression to be within 7% to 50% in different urban squatters;[10, 11] and even higher in a rural setting as discussed in a study conducted byMumford et al in Punjab.[10-12] It is higher than previously described high figures in different places of the world, going as much as twice to that in Uganda[13], Lesotho[14] and Zimbabwe.[15] Keeping these facts in mind, it is even more important to evaluate Pakistani patients suffering from chronic rheumatological disorders for anxiety and depression.

This study aimed to find out the burden of

co-morbid depression among patients of chronic rheumatological disorders and the possible relationship of chronicity and pain with depression/anxiety. It also investigated the relationship of different variables such as disease activity and permanent joint deformity, economic status, monthly family income and monthly expenditures on treatment with depression and anxiety.

Methods

This was a cross sectional study which was conducted in the rheumatology clinics of a private tertiary care hospital, in Karachi Pakistan. A total of 111 patients with a primary diagnosis of systemic lupus erythmatosis, systemic sclerosis, rheumatoid arthritis, sero-negative arthritis, spondyloarthritis, osteoarthritis or any other rheumatological disorder of 6 months duration were included.[9] All patients who had experienced death of a close relative within the past 3 months were excluded to avoid false positives due to grief reaction. Those who were on antidepressants, anti-psychotics or anxiolytics were also excluded. A written informed consent was taken from all the participants.

Aga Khan University Anxiety and Depression Scale (AKUADS), a self-administered questionnaire in Urdu was used to assess anxiety and depression. It comprised of 25 items with 13 psychological and 12 somatic questions. At a score of 20, it has a sensitivity of 66%, specificity of 79%, a positive predictive value of 83% and a negative predictive value of 60% for anxiety and depression.[16] (It is a screening scale in a widely understood local language Urdu and is validated in the community against a gold standard of assessment of a certified Psychiatrist.[16] It has been reported to be superior to the Self report questionnaire[17] and has been used in other studies successfully. [18, 19]) The information about basic demographic variables like age, gender, education, marital status, economic activity, monthly family income and monthly expenditure on treatment was reported by patients on a separate questionnaire annexed to AKUADS. The economic productivity of the patient was answered as none, retired or earning currently, which was followed by a question of monthly family income classified in four different ranges, from less than ten thousand to more than fifty thousand. Similarly monthly treatment expenditures were given as four choices of ranges from less than one thousand to more than five thousand. Additional information on disease activity and presence of permanent joint deformity was deduced from the consultant physician's notes in the assessment section for the current visit. The questionnaire was interviewer administered and strict confidentiality of all data was maintained at all stages of the study. The data were entered into and analyzed by using The Statistical Package for Social Sciences (SPSS) version 10.0.

The Pearson Chi-square test and Fisher's exact test were used to compare all the categorical variables. A p-value of <0.05 was taken as statistically significant. Spearman Rank Order Correlation Coefficient was used to measure strength of association and Kruskal Wallice H test for any significant differences among multiple groups (significant if $p < 0.05$).

Results

The study included 111 patients, 90 (81.1%) females and 21 (18.9%) males. Most of them (79 in number and 71.2%) were residents of Karachi. Mean age of the subjects was 41 ± 14 years with a range of 15 to 69 years. A total of 74 (67%) patients were married, 20 (18%) were single and 17 (15%) were widowed.

As most of the patients were middle-aged females, only 31 (27.9%) were economically active at the time of study while 78 (70.3%) were dependant on other family members and 2 (1.2%) were retired. While majority 73 (65.7%) of the patients belonged to families with monthly income ranging from 10,000 to 50,000 rupees, only 18 (16.2%) had family income below 10000 and 20 (18%) had more than 50,000 Pakistani rupees. Monthly expenditures on treatment in majority of patients 82 (73.8%) ranged from 1,000 to 5,000 Pakistani rupees.

Table. Association of anxiety and depression with various factors.

Variables	Pearson Chi-square	p-value	Statistical status
Gender	2.0	0.463	Insignificant
Marital Status	1.87	0.552	Insignificant
Economical Activity	3.963	0.138	Insignificant
Monthly Family Income	6.997	0.072	Insignificant
Presence of active pain and inflammation	8.331	0.004	Significant
Presence of permanent joint deformity	7.9	0.007	Significant

Almost half (46.8%) of the patients had an established diagnosis for more than 5 years, 39 (35.1%) had it for more than 2 years and 18 (16.21%) for a duration between 6 months and one year. Most (95, 85.5%) were educated till a minimum of secondary school. Only 8 (7.2%) had no schooling at all.

The most common diagnosis was rheumatoid arthritis 63 (57%) followed by systemic lupus erythematosis 19 (17%), systemic sclerosis 10 (9%), juvenile rheumatoid arthritis 7 (6.3%), osteoarthritis 6 (5.4%), polymyalgia rheumatica (1.8%) and vasculitides 4 (2.6%).

As stated in the consultant rheumatologists' notes, permanent joint deformity was present in 37 patients (33.3%) and 41 (36.9%) were suffering from active disease with pain and inflammation at that point in time.

On AKUDS, seventy three (65.8%) patients had a score of 20 or more and were considered to be positive for depression and anxiety disorders. Though frequency of depression and anxiety varied significantly with the educational qualification of the patients (no schooling=100%, primary=62.5%, middle=75%, matric76%, intermediate=72%, graduate=58%, $p<0.05$), there was a very weak linear relationship (Spearman Rank Order Correlation coefficient=0.118, H value=6.21, p=0.014). A similar relationship was observed with the time since diagnosis. Of those who had active pain and inflammation, 31 (75.5%) had anxiety/depression as compared to 39 (48.7%) of those who did not have active disease at the time of the study. Similarly, 28 (75.7%) of those who had permanent joint deformity were suffering from anxiety/depression as compared to 26 (48.64%) who did not have a joint deformity. Table shows all other associations with their respective p-vales, Pearson Chi-square values and statistical significance.

Discussion

The prevalence of anxiety and depression among different rheumatological disorders as individual categories is different and has been reported to be 46% among patients of scleroderma[20], 48% among Sjogren's disease and 32% in rheumatoid Arthritis.[21] There is, however, little data on total burden of mood disorders in rheumatology clinics. Our results show that around two third of our patient population suffered from depressive and anxiety disorders as a co-morbid condition which is higher than the above said figures for different disorders. This is also higher than that described in a similar study conducted among patients referred to rheumatology clinics in Edinburgh,[22] that which showed the prevalence of co-morbid mood disorders to be 33.5%. There can be many possible explanations for this comparative difference. Some of them are due to variation in social characteristics and prevalence of depression in general population.

Due to the large number of stressors, mood disorders in our patient population was higher than the reported figures for Pakistani general population.[10-12] Also our patients were older individuals (mean age 41 years, SD$\pm$14 years) compared to those studies on the general population, which showed that prevalence of depression rises with age.[11] These results are consistent with the previously described findings in literature and also support our hypothesis, that the patients with chronic rheumatologic disorders need careful and systematic evaluation for mood disorders.[8]

Education changes overall composition of human thought process and coping mechanism for stressors. Educated people are better equipped with different coping mechanisms than those who are uneducated. This is partly because it gives higher self-esteem and in turn renders the person less liable to feelings of helplessness. It also gives feelings of greater sense of control over the situation.[23] Though a linear relationship could not be demonstrated in our results but still there is statistically significant difference in the frequency of anxiety depression among patients with different levels of education. These findings have also been noted in general population groups.[11]

Marital status had no effect on the outcome in our population. The relationship between marital status and mood disorders is debatable. One of the local studies in general population shows marital status to be insignificant[24] but most of the local studies describe it to have a significant association in contrary to the findings of this study.[11] These differences in findings may be due to cultural differences and need further evaluation. It is notable that monthly family income and contribution of the subject in family income had no association with the outcome. This is in contrast to the popular belief, since research has also proven "that depression is not just an inventory of poverty".[11] Those who were suffering from active pain and inflammation and had joint deformity had higher frequency of depression.

This is because permanent joint deformity and physical disability are established stressors and are likely to cause emotional distress.

It is alarming that a large number of patients presenting to rheumatology clinics for follow up suffer from mood disorders. Based on current practice of rheumatology, there is very little provision to detect and treat this important comorbid condition and apply a complete bio-psycho-social model of management for all patients. There are very few rheumatologists who explore these areas with a keen interest because of lack of training or the belief that they would not be able to help. The questions of how to detect it in the first place and then treat are the areas which need further investigation as little data are available at the moment. As far as diagnosis is concerned, special attention to this aspect in the first and all follow up visits should be helpful.[23] In essence, it is the rheumatologist who has to keep it in mind and look for it. The question of treating these patients can be managed by practicing evidence-based treatments. These include anti-depressants, cognitive behavioral therapy and health education for self-management in general. It is, however, not known to what extent consultant rheumatologists themselves can administer these and, hence, need further investigation. Involvement of the services of psychology and psychiatry can also be considered but the question of overall cost would be an important impediment in Pakistan. Another possibility can be involvement of family general physician with referrals of only difficult cases to psychiatry and psychology, which mandates further study.

The study has certain limitations. The results and discussion are based only on data from a single, private tertiary care hospital which does not have a specific population of referred patients. As the design is cross-sectional, observation is made only at a particular duration in time; therefore it cannot be said whether the observations are a constant factor in the studied population or a finding at only one point in time. Another limitation is the application of the study tool, as AKUDS has not been validated for use in rheumatological population. However, the quoted frequency of mood disorder as a co-morbid might be lower than the actual frequency of mood disorders, in this clinical sub-specialty, as patients with diagnosed mood disorders before the diagnosis of a rheumatologic condition were excluded from the study sample.

In conclusion, almost two third of patients suffering from chronic rheumatological disorders who attended rheumatology clinics at a private tertiary care hospital of Pakistan also suffered from a concomitant mood disorder, which is alarmingly high. It makes mandatory the careful and systematic evaluation of all patients in rheumatology clinics for mood disorders and psychological distress. The application of the bio-psycho-social model of health care and interdepartmental shared care in addition to research will consequently improve the services of rheumatology and give a better understanding of the prevalence of depression and depression and anxiety among rheumatological subgroups.

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