ORIGINAL ARTICLE

Association between chronic low back pain, anxiety and depression in patients at a tertiary care centre

Muhammad Amir Sagheer, Muhammad Farhan Khan, Salman Sharif

Abstract

Objective: To observe the prevalence of anxiety and depression in chronic low back pain population at a tertiary care centre.

Methods: The prospective cross-sectional study was conducted using convenience sampling at the Department of Neurosurgery, at Liaquat National Hospital, Karachi, Pakistan, from January to June 2010. The prevalence of anxiety and depression in chronic low back pain patients was studied according to specified age and gender groups using Hospital Anxiety and Depression Scale.

Results: Of the 140 patients in the study, 66 (47.14%) were females and 74 (52.85%) were males. The average age of the patients was 43.02±13.34 years. The average duration of symptoms was 4.29±3.3 years. Abnormal level of anxiety and depression were found in 77 (55%) and 68 (48.57%) patients respectively. Out of them 54 (38.5%) and 51 (36.4%) were borderline abnormal for anxiety and depression respectively, while 23 (16.4%) and 17 (12.1%) were abnormal for anxiety and depression respectively. Among the males, there were 20 (14.28%) and 23 (16.42%) patients with abnormal levels of the corresponding numbers among the females were 57 (40.71%) and 45 (32.14%). There was a significant association in anxiety ($p<0.01$) and depression ($p<0.01$) levels with respect to gender and no significant association with respect to age ($p>0.05$).

Conclusion: Individuals with chronic low back pain were at high risk to experience anxiety and depression. This risk was higher for females.

Keywords: Chronic low back pain, Psychological disturbance, Anxiety, Depression. (JPMA 63: 688; 2013)

Introduction

Low back pain is nearly ubiquitous in society. Many published guidelines for the diagnosis and management of chronic low back pain are available. Most are straightforward, but few emphasise the fact that family physicians actually lack the richness which comes from addressing psychosocial issues.[1] Up to 30% of individuals, who report low back pain go on to have recurrent or persistent symptoms. As a result, chronic low back pain is one of the most common reasons for medical visits.[2]

Chronic non-malignant pain has been defined as pain experienced every day for three of the preceding six months.[3] Non-organic low back pain also occurs and can be divided into several categories, including psychosomatic spinal pain (tension syndrome fibrositis, or muscle tension generated physiologically by anxiety); psychogenic spinal pain (somatisation of anxiety into neck or back pain with no physiological changes, as in a conversion reaction); psychogenic modification of organic spinal pain (an emotional reaction that modifies the appreciation of an organic pain); and situational spinal pain (litigation reaction, conscious over concern of exaggeration).[4] Emotional stress has long been recognised as a contributor to pain and/or its perception.[5-7]

Anxiety and depression are two most common forms of psychological disturbances seen in patients. Back symptoms are frequently accompanied by depression or anxiety and psychological distress.[8,9] The Hospital Anxiety and Depression Scale (HADS) is one of the most widely used tools in medical practice to identify these.[10] Scant data is available on the prevalence of anxiety and depression in the chronic low back pain population. As such, the current study was planned to assess its frequency in a tertiary care setting.

Patients and Methods

The prospective cross-sectional study was conducted at the Department of Neurosurgery, Liaquat National Hospital, Karachi, Pakistan, from January to June 2010. The patients were enrolled into the study provided that they met the inclusion criteria that entailed a history of chronic low back pain (i.e. pain experienced every day for three months in the preceding six months), age above 15 years, patients of both gender. Patients with acute back pain, age below 15 years and above 80 years, patients who had spine/back surgery, patients with spine fractures and

Department of Neurosurgery, Liaquat National Hospital, Karachi, Pakistan.
Correspondence: Muhammad Amir Sagheer. Email: draamirlnh@yahoo.com

patients with metabolic bone disease/disorders were excluded from the study. A total of 140 consecutive chronic low back pain patients were enrolled from the out door patient department (OPD) and the Neurosurgery Ward on the basis of convenience sampling after obtaining their informed consent. Before clinical evaluation, all patients completed a questionnaire that included demographic details. HADS scores were used as a measure of the severity of anxiety and depression subscales. The score ranges were classified as: Normal 0-7; Borderline abnormal 8-10; and Abnormal 11-21.

Frequencies and percentages were calculated for gender, Borderline HADS 8-10, and HADS 11-21. The frequencies and percentages of anxiety and depressions levels were also measured according to age and gender. Mean±standard deviation was calculated for age and duration of symptoms. To test the significance of association between age groups and gender with the depression and anxiety levels, chi-square test was applied.

Results

The study sample consisted of 140 individuals who provided valid responses to the survey questions. The response rate, as such, was 100%. Of the total, there were 66 (47.14%) women and 74 (52.85%) men in the study sample. The average age of the patients was 43.02±13.34 years. The average duration of symptoms was 4.29±3.3 years with a minimum of 8 months and a maximum of 15 years.

The varying HADS scores were noted for both anxiety and depression sub-scales (Table-1).

Table-1: Prevalence of anxiety and depression.

HADS subclass	Anxiety subscale	Depression subscale
Normal 0-7	45% (63)	51.4% (72)
Borderline abnormal 8-10	38.5%(54)	36.4% (51)
Abnormal 11-21	16.4%(23)	12.1% (17)

HADS: Hospital anxiety and depression scale.

Besides, among the males, 20 (14.28%) and 23 (16.42%) patients had abnormal level of anxiety and depression respectively, while the corresponding numbers for the females were 57 (40.71%) and 45 (32.14%). Chi-square test results showed significant association in anxiety ($p<0.01$) and depression ($p<0.01$) levels with respect to gender. No significant association with respect to age was found in either anxiety or depression levels ($p>0.05$).

Discussion

Various cross-sectional studies indicate an association between psychological factors and the occurrence of low back pain.[11] The possible etiological importance of psychiatric disorders was investigated in a group of 200 patients with chronic low back pain who were entering a functional restoration programme.[12] The patients were assessed for current and lifetime psychiatric syndrome; 77% of patients met lifetime diagnostic criteria and 59% showed current symptoms for at least one psychiatric diagnosis - most commonly depression substance abuse and anxiety disorders. The prevalence rates were significantly greater than the rates in the general population; 54% of patients with depression and 95% of those with anxiety disorders.

The present study found a high prevalence of anxiety and depression in chronic low back pain patients. Abnormal levels of anxiety and depression were found in 55% and 48.5% of the patients, respectively. Out of them, 38.5% and 36.4% were borderline abnormal (HADS 8-10) for anxiety and depression respectively, and 16.4% and 12.1% were abnormal (HADS 11-21) for anxiety and depression respectively. Although anxiety has primarily been associated with the reaction to acute pain,[13,14] it is also found in chronic low back pain.[14-16] A study of 70 German patients with back pain reported 36% patients with abnormal anxiety (HADS- A>10) and 29% with abnormal depression (HADS-D>8). Abnormal anxiety and/or

Table-2: Gender distribution.

Gender	HADS subclass	Anxiety subscale		Depression subscale	
		Patients	%	Patients	%
Male patients	Normal 0-7	54	73.0%	51	68.9%
	Borderline abnormal 8-10	13	17.6%	15	20.3%
	Abnormal 11-21	7	9.4%	8	10.8%
Total		74		74	
Female patients	Normal 0-7	9	13.7%	21	31.8%
	Borderline abnormal 8-10	41	62.1%	36	54.6%
	Abnormal 11-21	16	24.2%	9	13.6%
Total		66		66	

HADS: Hospital anxiety and depression scale.

depression were noted in 47% patients.[17]

In our study 14.28% and 16.42% male patients had abnormal levels of anxiety and depression respectively, while abnormal levels of anxiety and depression were found in 40.71% and 32.14% female patients, respectively. In a large-scale survey in Australia, 11% males and 13.5% females with chronic pain reported to have some degree of interference with daily activities because of the pain.[18] Similarly, many studies have shown depression to be prevalent among people with chronic pain.[9,19,20] In clinical samples, rates of major depression in such patients can range from 30% to 54%,[21,22] which is significantly higher than the rate of 5-8% found in the general population.[23]

There are a number of important limitations to our findings. Information on workers' compensation or litigation was lacking, which is one of the most important predictors of recovery from chronic back pain,[24,25] given the chronic nature of these patients' symptoms. It is possible that it would have confounded our results.

Another notable limitation of the study is that the cause and effect could not be established. Notably, there is no way to determine if depression is the result of chronic pain or a causative factor. There is evidence that depression and chronic low back pain occur together, but whether they are causal, coincidental, mutually exacerbating or synergistic is not clear.[9]

Conclusions

In understanding, managing and treating disability and depression in chronic low back pain patients, psychological factors are important. In patients with complicating comorbid conditions, such as depression, appropriate therapy should be initiated.

References

1. Gatchel RJ, Gardea MA. Psychosocial issues: their importance in predicting disability, response to treatment, and search for compensation. Neurol Clin 1999; 17: 149-66.
2. Urquhart DM, Hoving JL, Assendelft WW, Roland M, van Tulder MW. Antidepressants for non-specific low back pain. (Cochrane Review). In: The Cochrane Library, Issue 1, 2008. Chichester, UK: John Wiley & Sons, Ltd.
3. International Association for the Study of Pain, Subcommittee on Taxonomy. Classification of chronic pain. Descriptions of chronic pain syndromes and definitions of pain terms. Pain 1986; Suppl 3: S1-S266.
4. McCullough JA, Snook D, Weiner BK. Differential diagnosis of low back pain. In: Tollison CD, Satterthwaite JR, Tollison JW eds. Practical pain management. 3rd ed. Philadelphia: Lippincott Williams & Wilkins; 2002; pp 389-410.
5. Macfarlane TV, Kincey J, Worthington HV. The association between psychological factors and oro-facial pain: a community-based study. Eur J Pain 2002; 6: 427-34.
6. Rotheram-Borus MJ. Variations in perceived pain associated with emotional distress and social identity in AIDS. AIDS Patient Care STDS 2000; 14: 659-65.
7. Haufler AJ, Feuerstein M, Huang GD. Job stress, upper extremity pain and functional limitations in symptomatic computer users. Am J Ind Med 2000; 38: 507-15.
8. Kinney RK, Gatchel RJ, Polatin BP, Fogarty WT, Mayer TG. Prevalence of psychopathology in acute and chronic low back pain patients. J Occup Rehab 1993; 3: 95-103.
9. Rush AJ, Polatin P, Gatchel RJ. Depression and chronic low back pain: establishing priorities in treatment. Spine 2000; 25: 2566-2571.
10. Zigmond AS, Snaith RP. The hospital anxiety and depression scale. Acta Psychiatr Scand 1983; 67: 361-70.
11. Andersson GBJ. The epidemiology of spinal disorders. In: Frymoyer JW, Ducker TB, eds. The adult spine: principles and practice, 2nd ed. Philadelphia: Lippincott-Raven, 1997: 93-141.
12. Polatin PB, Kinney RK, Gatchel RJ, Lillo E, Mayer TG. Psychiatric illness and chronic back pain. The mind and the spine - which goes first? Spine 1993; 18: 66-71.
13. Hendler N, Viernstein M, Gucer P, Long D. A preoperative screening test for chronic back pain patients. Psychosomatics 1979; 20: 801-8.
14. Sedlak K. Low back pain: perception and tolerance. Spine 1985; 10: 440-3.
15. Krishnan KR, France RD, Pelton S, McCann UD, Davidson J, Urban BJ. Chronic pain and depression. II. Symptoms of anxiety in chronic low back pain patients and their relationship to subtypes of depression. Pain 1985; 22: 289-94.
16. Merskey H, Boyd DB. Emotional adjustment and chronic pain. Pain 1978; 5: 173-8.
17. Herrmann C. International experiences with the Hospital Anxiety and Depression Scale - a review of validation data and clinical results. J Psychosom Res 1997; 42: 17-41.
18. Blyth FM, March LM, Brnabic AJ, Jorm LR, Williamson M, Cousins MJ. Chronic pain in Australia: a prevalence study. Pain 2001; 89: 127-34.
19. Dworkin SF, Gitlin MJ. Clinical aspects of depression in chronic pain patients. Clin J Pain 1991; 7: 79-94.
20. Magni G, Caldieron C, Rigatti-Luchini S, Merskey H. Chronic musculoskeletal pain and depressive symptoms in the general population: an analysis of the First National Health and Nutrition Examination Survey data. Pain 1990; 43: 299-307.
21. Sullivan MJ, Reesor K, Mikail SF, Fisher R. The treatment of depression in chronic low back pain: review and recommendations. Pain 1992; 50: 5-13.
22. Banks SM, Kerns RD. Explaining high rates of depression in chronic pain: a diathesis-stress framework. Psycholo Bull 1996; 119: 95-110.
23. Kessler RC, Berglund P, Demler O, Jin R, Koretz D, Merikangas KR, et al. The epidemiology of major depressive disorder: results from the National Comorbidity Survey Replication (NCS-R). JAMA 2003; 289: 3095-105.
24. Rohling ML, Binder LM, Langhinrichsen-Rohling J. Money matters: a meta-analytic review of the association between financial compensation and the experience and treatment of chronic pain. Health Psychol 1995; 14: 537-47.
25. Rainville J, Sobel JB, Hartigan C, Wright A. The effect of compensation involvement on the reporting of pain and disability by patients referred for rehabilitation of chronic low back pain. Spine 1997; 22: 2016-24.