FREQUENCY OF DEPRESSION AND ANXIETY AMONG PATIENTS WITH CHRONIC SCIATICA; UNSCREENED AND UNDIAGNOSED CASES MAY REPRESENT AN ICEBERG PHENOMENON

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ABSTRACT

Objective: To calculate frequency and grades of undocumented anxiety and depression in patients having unilateral sciatica due to single prolapsed lumbar inter-vertebral disc (PLIVD).
Study Design: Cross-sectional study.
Place and Duration of Study: Combined Military Hospital Lahore, from Mar 2013 to Jun 2014.
Material and Methods: Cross-sectional study conducted at Combined Military Hospital Lahore, from March 2013 to Jun 2014, with non-probability consecutive sampling. Cases were taken from neurosurgery department, having sciatica due to single PLIVD. Controls were selected from healthy personnel with neither any current major/minor ailment nor any diagnosed mental or physical health issue. First hundred individuals meeting the inclusion and exclusion criteria were enrolled as controls and cases (100 each). Independent variables were multiple demographic factors; dependent variables were grades of anxiety and depression. Standardized Beck Anxiety Inventory-Udru (BAI-U) and Beck Depression Inventory-Urdu (BDI-U) were selected. Authors assisted the subjects to fill inventories. Statistical analysis was done via descriptive statistics (SPSS-15), data expressed in frequencies, percentages and mean ± SD (standard deviation), cross-tabulation done via chi-square; *p*-value <0.05 was considered as significant.
Results: Out of 200 subjects, frequencies of males and females were 72.0% and 28.0% respectively; mean age 39.15 ± 15.001 years, education grades 9.27 ± 5.87 and income/month 43510.00 ± 53305.32 PKR. Among cases, higher frequencies of anxiety (84%) and depression (55%) were found as compared to controls (anxiety 24%, depression 8%). Anxiety (*p*-0.03) was more significant than depression (*p*-0.131); while severe anxiety, severe depression and suicidal ideation were present in 27.0%, 19.0% and 4% respectively. Females were more prone to have anxiety (*p*-0.003); patients aged 25-60 years had significant depression (*p*-0.02).
Conclusion: Considerable number of patients with chronic unilateral sciatica were diagnosed to have significant anxiety/depression. Multidisciplinary approach involving psychiatrists must be adopted to timely screen and aptly manage these patients.

Keywords: Anxiety, Chronic sciatica, Depression, Prolapsed lumbar inter-vertebral disc (PLIVD).

INTRODUCTION

Lumbar region is the commonest site to develop spinal disc herniation, L4-L5 or L5-S1 being involved in 95% of cases[1], followed by cervical discs (especially C5-C6, C6-C7) and then thoracic discs (0.15% to 4.0% only). The most frequently affected nerve is sciatic, but femoral nerve may be rarely involved[2]. The typical pain travels along the nerve in a shooting pattern[3].

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Sciatica describes a symptom rather than a specific disease. It can be labeled on clinical assessment; but absolute diagnosis can be established utilizing imaging techniques like computed tomography and magnetic resonance imaging[4]. Patients suffering from sciatica due to prolapsed lumbar inter-vertebral disk (PLIVD) are at high risk to suffer from chronic pain, which further predisposes them to develop psychiatric disorders; specially depression and anxiety[5]. Yet, the phenomenon of co-existing anxiety/ depression in patients of chronic sciatica is under research. Anxiety can be described as a spiteful

state, associated with undesirable behavioral and somatic symptoms[6]; while the state of low mood and diminished physical activity affecting an individual's sense of well-being is called as depression[7]. Although it is generally understandable that patients of chronic sciatica might be having anxiety/depression, but as per the best knowledge of the authors, to date no specific study has been conducted about the subject matter. This study being first of its type is expected to yield results which may significantly contribute to psychological screening and treatment of patients with chronic sciatica.

PATIENTS AND METHODS

This cross-sectional study was conducted at neurosurgery department of Combined Military Hospital Lahore; from Mar 2013 to Jun 2014. An attempt was made to analyze frequencies and intensity of grades of depression and anxiety among patients suffering from chronic unilateral sciatica due to single prolapsed intervertebral disc. The cases and controls represented the similar groups of population; therefore their demographic characteristics were comparable. Non-probability consecutive sampling technique was utilized.

Formal approval by the ethical committee of the hospital was obtained, followed by informed consent taken from all subjects. The demographic details of subjects were inscribed. Appropriate screening was done by the authors via detailed history taking, examination and information regarding managements for any stated musculo-cutaneous, psychiatric or other physical or mental health disorders. Cases were selected from indoor and outdoor clientele of neurosurgery department of the said hospital. Total 186 individuals were interviewed to enroll 100 patients as cases who met the inclusion and exclusion criteria.

Adult males & females aged more than 18 years, randomly selected from all socioeconomic classes and variable levels of education, having pain (unilateral sciatica) for more than three months duration with single PLIVD proved on MRI and no other MRI findings were included in the study. Moreover in whom surgery for disc prolapse was not done were also included.

Patients having sciatica due to causes other than PLIVD or with multiple level PLIVD, prolapsed inter-vertebral disc of levels other than lumbar spine, having coexisting known co-morbid conditions like mononeuropathies, polyneuropathies, tuberculosis, diabetes mellitus, hypertension, ischemic heart disease etc were not included in the study. Moreover patients having history of past episodes of backache, history of spinal or pelvic trauma/fracture, history of depression, anxiety or other psychiatric ailment or family history of psychiatric ailment were also not included in the study.

The controls were selected from healthy personnel; having no current minor or major ailment nor any known co-morbid conditions like neuropathies, tuberculosis, diabetes mellitus, hypertension, ischemic heart disease etc. These included soldiers in the units, their families in quarters, visitors and attendants of patients, employees in local schools and banks. Total 162 individuals were interviewed to enroll 100 individuals as controls.

The standardized Urdu version of Beck Anxiety Inventory (BAI-U) and Beck Depression Inventory (BDI-U) were selected. Subjects were assisted by the authors to comprehend and fill the inventories. Age, gender, education and income per month in PKR were endorsed. Statistical analysis was done via descriptive statistics of SPSS 15. Numerical variables were expressed as mean ± SD (standard deviation), while categorical variables were described as frequencies and percentages. Demographic variables were the independent variables; dependent variables were grades of anxiety and depression. Cross-tabulation was done via chi-square; *p*-value less than 0.05 regarded as significant. An attempt was made to evaluate and compare the frequencies and intensity of anxiety and depression among cases and controls, with a

study of their relation with multitude of demographic variables.

RESULTS

Out of 200 subjects (n=200), 144 (72.0%) were males and 56 (28.0%) were females. Mean age was 39.15 ± 15.001 years, education 9.27 ± 5.87 grades (table) and income/month 43510.00 ± 53305.32 PKR. Considerably higher levels of anxiety and depression were found in cases (84.0% and 55.0% respectively) as compared to controls (24% and 8% respectively); anxiety (*p*-0.03) being more significant than depression (*p*-0.131). Further break-up of grades of anxiety and depression in the subjects is shown in fig-1 and 2 respectively. Among cases; significant number of cases (4%) depicted suicidal ideation, females were more prone to have anxiety (*p*-0.003) while patients aged 25-60 years had significant depression (*p*-0.02). Anxiety scores were not significantly affected by age (*p*-0.307), education (*p*-0.71) or income (*p*-0.162). Scores of depression had no significant impact of gender (*p*-0.065), education (*p*-0.217) or monthly income (*p*-0.702). The break-up of *p*-values with various variables is documented in the table.

Table: Frequencies of various variables along with *p*-values achieved via cross-tabulation (via chi-square) done between independent and outcome variables.

S. No	Variable	Sub-variable	Anxiety	*p*-value	Depression	*p*-value
1.	Subject	Cases	84	0.037	55	0.131
		Controls	24		8	
2.	Gender	Male	79	0.003	41	0.065
		Female	29		22	
3.	Age Group	18-24 Yrs	22	0.307	13	0.025
		25-60 Yrs	70		42	
		>60 Yrs	16		8	
4.	Education	<5grades	33	0.710	18	0.217
		5-10 Grades	42		24	
		>10 Grades	33		21	
5.	Income per Month in PKR (Thousands)	<10	44	0.162	23	0.702
		10-50	54		35	
		>50	10		5	

DISCUSSION

An association between anxiety/depression and musculoskeletal disorders has consistently been reported during the past few years. Sciatica is a very common musculoskeletal disorder encountered in clinical practice. Literature revealed that 1.6% to 43.0% of general population suffers from sciatica[8]. It is also called as sciatic neuritis, sciatic neuralgia[9], sciatic nerve irritation[10], or lumbar radiculopathy[11]. In more than 90% of cases, it is caused by spinal disc herniation pressing on one of the lumbar or sacral nerve roots[8]. Sciatica has always been known to cause chronic pain. Any pain lasting for three months' duration or more is called as chronic pain[12]. It may also be defined as a pain lasting longer than the presumed period of healing[13]. Dealing with sciatica is not always a simple affair. A patient may not respond to multiple treatment modalities, thus keeps suffering from substantial pain for months and even years. When lumbar disc herniation is the underlying cause, spontaneous resolution of sciatic pain is awaited for considerable time in most of the cases[14]. Some literature revealed that there is limited role of analgesics[15] and steroids (enteral or parenteral)[16] in its treatment. Even spinal manipulation is more helpful to relieve acute sciatica, and quite helpless for chronic pain[17]. Neurosurgery is the last resort, which is usually reserved for patients with significant neurological deficits[18]. Patients of

sciatica keep reporting to neuro-surgical department for both indoor and outdoor management. Such scenario unambiguously predisposes patients to develop psychiatric challenges especially anxiety and depression. But they lack insight and are seldom screened for it. Both clinicians and patients largerly remain focused on pain relief. Thus missing mental health deterioration consequent to chronic pain even poorer compliance and response to treatment modalities.

This research provides a basis for systematic approach to study association between anxiety and depression in patients having unilateral sciatica of more than three months duration due to single PLIVD and its relevance with associated demographic factors. In this study, the frequency of anxiety and depression amongst our cases was

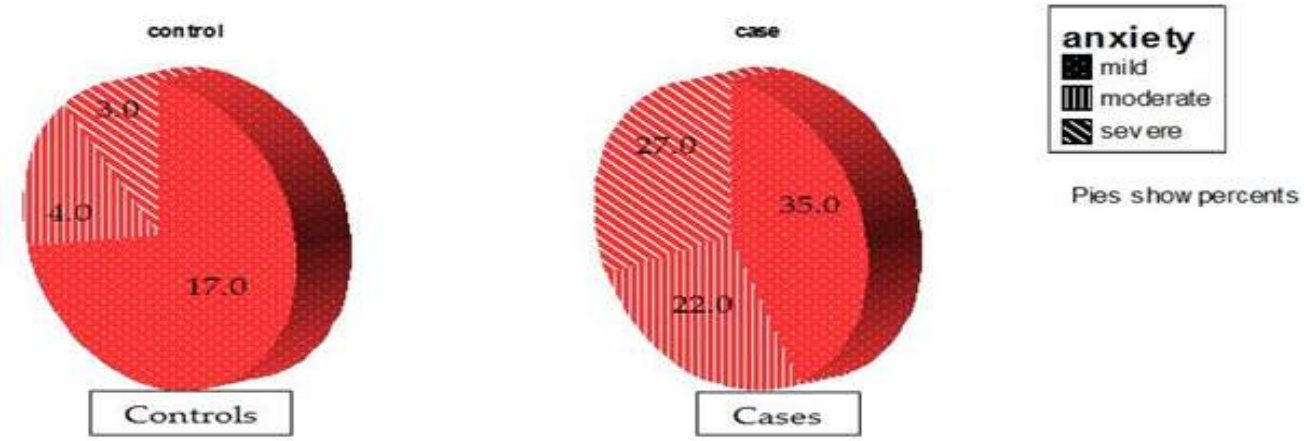

Figure-1: Grades of anxiety in cases and control groups.

Figure-2: Grades of depression in case and control groups.

are not uncommon.

Anxiety makes a person more aware of unforeseen upcoming negative events, and patient may not always be able to adequately cope with them[19]. It is often accompanied by restlessness, fatigue, problems in concentration, and muscular tension. Depressed patients may depict self-neglect, unhealthy diet, poor lifestyle and even chances of self harm[20]. It may lead to an much higher than the control group, anxiety (p-0.037) being more severe than depression (p-0.131). These psychiatric symptoms may lead to delay in recovery from underline disease as well as may exhibit themselves as a co-morbid condition affecting mental and physical health states. The alarming figure of severe anxiety and depression amongst the cases deserves out of the ordinary and judicious attention. Significant number of cases revealed severe anxiety and

depression, four patients even exhibited tendency of self-harm and suicide which was an alarming figure. None of them were ever screened for mental health status. Apropos, management of patients with severe psychiatric ailment especially suicidal ideation cannot be over emphasized. No specific literature was found to analyze anxiety and depression in patients with chronic sciatica due to single PLIVD.

In this study, the prevalence and severity of anxiety and depression in females was higher than the males. Literature reveals that ladies are at higher risk to develop anxiety[21] and depression[22,23]. In this study, depression was more significant in patients aged 25-60 years. Researchers have documented that anxiety is more common in adults[21]. This study showed lack of significant impact of age, education and income on levels of anxiety and gender, education or income on levels of depression in cases. Adequate literature was not available to analyze similar data in patients with sciatica due to PLIVD.

Mental health disorders must be timely managed by mental health professionals. This study aimed to highlight the lack of appropriate screening of patients of chronic sciatica who are potential candidates to build up psychiatric signs and symptoms and to opine that there is added advantage of incorporating multidisciplinary approach by mental health care experts.

This study has several limitations. First, few patients qualifying the criteria did not participate due to social or language barriers, thus possibility of selection bias cannot be negated. Second, the generalization of these results from a single academic medical center to other health care facilities is unknown. Third, BAI/BDI or any other standardized questionnaire cannot be used alone to diagnose anxiety/depression. Although the positive likelihood ratio for these inventories is similar to that of other accepted screening tools, additional clinical evaluation would be necessary to diagnose anxiety and/or depression in participants who had positive screening scores. Fourth, larger cohort could have represented greater population size. Fifth, despite through research by the authors, specific data on subject was not available for appropriate literature review.

This study is first of its type, dealing with anxiety and depression in sufferers of unilateral sciatica due to diagnosed single PLIVD. It can definitely provide a basis for future research regarding screening and managing the mental health issues of these patients. This may prove to be a baseline study for other neurosurgical disorders with allied hidden psychiatric disorders.

CONCLUSION

Considerable number of patients with chronic unilateral sciatica were diagnosed to have significant anxiety/depression.

It would be prudent to adopt a multidisciplinary approach involing psychiatrists for timely screening and diagnosing. These patients so that appropriate management strategies are adopted.

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CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

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