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Research article

Psychiatric aspects in endocrinolgical disorders: Identifying depressive and anxiety in endocrine patients attending outpatient department - A Study from General Hospital in Kashmir (India)

Sheikh Shoib, Javid Ahmad, Aatif Rashid, Hamid Shah, Raheel Mushtaq and Manzoor Malik

Abstract

Background: Psychiatric disorders like depression and anxiety is frequently associated with function of hypothalamic-pituitary-thyroidal axis. Psychiatric disorders frequently mimic the symptoms of endocrinological disorders. With this background, we studied the depression and anxiety in different endocrinogical disorders.

Objective: The aim of the study was to assess the depression and anxiety in patients suffering from endocrinological disorders.

Method: We conducted a cross-sectional study for a period of one and half year in patients attending the Department of Medicine, Government Medical College Hospital Srinagar. General description, demographic data were recorded using the semi structured interview scale. A total of 152 cases of different endocrinological disorders were taken up for the study for one year, while Hospital Anxiety and Depression scale (HADS) was used for purpose of screening anxiety and depressive disorders in patients suffering from different endocrinogical disorders. Descriptive statistics and unadjusted 3×2×2 test chi square was conducted to determine prevalence.

Results: Out of total 152 subjects, 71 were males (46.72%)), and 81 were females (53.28%) and mean age of the patients was 35.85 ± 9.475. The mean HADS score for anxiety alone, depression alone and anxiety/depression patients were 13.42, 15.7 and 25.62 respectively. On the basis of HADS screening, 96(63.157%) patients had varying degree of psychiatric co morbidity. 27 had anxiety alone, 30 had depression alone where 39 patients had anxiety and depression both.

Conclusion: The findings of our study suggest that depression and anxiety is highly prevalent in diabetic patients and is largely unrecognized in the primary care setting. Most of the clinicians do not suspect this important co morbidity of endocrinological disorders in the beginning resulting in delayed diagnosis.

Keywords: Anxiety, depression, endocrinological disorder

Introduction

Endocrine disorders are frequently accompanied by psychological disturbances. Conversely, psychiatric disorders, to significant extent demonstrate consistent pattern of endocrine dysfunctions. [1] Endocrinopathies manifests as myriad of psychiatric symptoms, as hormones affect a variety of organ systems function. The presence of psychiatric symptoms in patients with primary endocrine disorders provides a new insight for exploring link between hormones and affective function.[2] Disturbance of hypothalamic-pituitary-thyroidal axis is of considerable interest in psychiatry and is known to be associated with a number of psychiatric abnormalities.[3]Thus, the main focus of psychoneuroendocrinology is on identifying changes in basal levels of pituitary and end-organ hormones in patients with psychiatric disorders. Psychiatric symptoms may be the first manifestations of endocrine disease, but often are not recognized as such. Patient may experience a worsening of the psychiatric condition and an emergence of physical symptoms with the progression of the disorder.[4] Psychiatric manifestations of endocrine dysfunction include mood disturbances, anxiety, cognitive dysfunction, dementia, delirium, and psychosis. While dealing with treatment-resistant psychiatric disorder, endocrinopathies should also be considered as a possible cause in management. Psychotropics medicine may worsen the psychiatric symptoms and improves only once the underlying endocrine disturbance is corrected. [5]The lifetime prevalence of depression and anxiety is 11.8% to 36.8% and 5.0% to 41.2% respectively in the group with previously known thyroid disorder. [6,7].The occurrence of major depression in DM is mostly estimated around 12% (ranging from 8-18%). 15-35 % of individuals with DM report milder types depression. [8]. Depressive symptom is seen in almost half of patients with Cushing's syndrome and these experience moderate to severe symptoms. Some patients with Cushing's syndrome also experience psychotic symptoms [9]. Patients suffering from Addison's disease may be misdiagnosed with major depressive disorder, personality disorder, dementia, or somatoform disorders [4, 10]. Women with hyperandrogenic syndromes are at an increased risk for mood disorders, and the rate of depression among women with PCOS has been reported

to be as high as 50 percent. Central 5-HT, system dysregulation that causes depression might simultaneously affect peripheral insulin sensitivity, or vice versa, possibly via behavioral or neuroendocrinological pathways, or both. [10]

Hollinrake 2007 showed prevalence of depression has shown it to be four times that of women without PCOS. Hollinrake screened patients with PCOS for depression and found total prevalence of depressive disorders which included women diagnosed with depression before the study, was 35% in the PCOS group[11]. No specific psychiatric symptoms have been consistently associated with acromegaly or gigantism or with elevated GH levels. Adjustment disorder may occur from changes in physical appearance and from living with a chronic illness [11]. Sheehan's syndrome (SS) refers to the occurrence of varying degree of hypopituitarism after parturition (1). It is a rare cause of hypopituitarism in developed countries owing to advances in obstetric care and its frequency is decreasing worldwide. Reports of psychoses in patients with Sheehan's syndrome are rare. [13] Psychiatric disturbances are commonly observed during the course of endocrine disorders .The underlying cause can be hyper- or hyposecretion of hormones, secondary to the pathogenic mechanisms. medical or surgical treatment of endocrine diseases, or due to genetic aberrations[14]. Psychiatric disorders frequently mimic the symptoms of endocrinological disorders. In view of sizable number of patients seeking treatment from our department present with comorbid endocrinolgical disorders, we planned the present study to investigate psychiatric morbidity preferably anxiety and depression pattern among endocrinolgical disorders patients. With this background, we studied the depression and anxiety in different endocrinogical disorders.

Methods

The present study was conducted in the SMHS Hospital of Government medical college Srinagar and the study sample was drawn from patients attending the endocrinogical OPD in the Department of Medicine at Government Medical College Hospital Srinagar (SMHS).The study was conducted over a period of one and half year, from April 2011 to September 2012 in patients attending the Department of Medicine Government Medical College Hospital Srinagar enrolling 152 cases of Endocrinological disorders. All patients were first examined by Consultant endocrinologist. The patients were then selected using simple random sampling choosing every alternate patient. General information including age, sex, residence, economic status, past history of thyroid disorders, family history of psychiatric disorders was included. An endocrinology specialist first examined the patients, while a psychiatrist administers Hospital Anxiety and Depression scale (HADS). Hospital Anxiety and Depression scale (HADS) was used for purpose of screening anxiety and depressive disorders in patients suffering from different endocrinogical disorders. Hospital Anxiety and Depression scale (HADS) is used for purpose of screening anxiety and depressive disorders in patient suffering from chronic somatic disease. HADS contain 14 items and consist of two subscales: anxiety and depression with seven question each. Each question is rated on four point scale (0 to 3) giving maximum total score of 21 each for anxiety and depression. Score of 11 or more is considered a case of psychological morbidity, while as score of 8-10 represents borderline and 0-7 as normal. The forward backward procedure was applied to translate HADS from English to Urdu by a medical person and professional translator. [15]

The participating physicians subjected select patient of chronic Endocrinological disorders to HADS Questionnaire and recorded scores both for anxiety and for depression.

The patients were subjected to inclusion and exclusion criteria as given below:

Inclusion criteria

- All endocrinological disorders.
- Both sexes will be included.
- Age > 15 yrs.
- Those who will give consent.

Exclusion criteria

- Those who don't consent.
- If diagnoses is not clear.
- Age less than 15 years.
- Presence of pregnancy or a history of pregnancy in the last six months.
- Those who are on steroids or drugs known to interfere with thyroid function

General description, demographic data and psychiatric history was be recorded using the semi structured interview which was pretested

Statistical methods: Statistical analyses were performed using the SPSS, version 16.0 for Windows. A secure computerized database was established and maintained throughout the study. Patient names were replaced with unique identifying numbers. Descriptive statics were used to generate a profiles of each illness group based on presence of depression only, anxiety only and those with both anxiety and depression. To determine whether there were any significant differences between each illness group in the prevalence of depression and anxiety disorders , an unadjusted 3×2×2 test chi square was conducted. Data were analyzed by the Pearson chi-squared test and t test. $P<0.05$ was considered as the significance level in the evaluations.

Consent: Informed consent was obtained from each patient; those who were considered incapable of consenting were allowed to participate with consent of their closest family member or custodian. All patients were informed about the nature of the research within the hospital and willingly gave their consent to participate. Information sheets and preliminary interviews made it clear that the choice to consent or otherwise would have no bearing on the treatment offered. The project ensured the anonymity of the subjects by replacing patient names with unique identifying numbers before the statistical procedures began.

Table 1: Age and sex distribution

		Sex				Total	
		Male		Female			
Age group	< 25	14	20%	7	9%	21	14%
	25 – 35	20	28%	17	21%	37	24%
	35 – 45	17	24%	23	28%	40	26%
	45 – 55	11	16%	19	24%	30	20%
	55 & above	9	13%	15	19%	24	16%
Total		71	100%	81	100%	152	100%
Mean ± SD		51.4± 13.7		56.4± 13.1		54.1± 13.6	

Table 2: Demographic Characteristics of the Studied Patients

Characteristic		N	%
Dwelling	Rural	98	64.47
	Urban	54	35.52
Marital status	Unmarried	28	18.4
	Married	103	67.7
	Widowed	21	13.8
Occupation	Household	61	40.1
	Unskilled	29	19
	Semiskilled	39	25.6
	Skilled	23	15.1
	Professional	8	5.26
Family type	Nuclear	79	51.97
	Joint	28	18.4
	Extended	45	29.6
Literacy status	Illiterate	82	53.9
	Primary	22	14.4
	Secondary	16	10.5
	Matric	13	8.55
	Graduate	11	7.23
	Postgraduate/Professional	8	5.26
Family Income(Rs)	< 5000	45	29.6
	5000 to 10000	85	55.92
	≥ 10000	22	14.4
Socioeconomic status (Kuppuswamy Scale)	Lower	32	21
	Upper lower	11	7.23
	Middle	84	55.2
	Upper middle	19	12.5
	Upper	6	3.94

Table 3: Result of HADS Scoring

Variable	Total (n=96)	Anxiety alone	Depression Alone	Anxiety depression both	p value
Male	37(38.54%)	8(29.6%)	18(60 %)	11(28.2%)	-
Female	59(61.4%)	19(70.3%)	12(40%)	28(71.7 %)	-
Age (Years)	54.1± 13.6	51.4± 13.7	56.4± 13.1	54.1± 13.1	< 0.005
Mean HADS Score	-	13.42±3.4	15.73±3.3	25.62±4.3	< 0.005

Table 4: Types of endocrinological disorders

Endocrinological disorders	Number of patients(N=152)	Psychiatric comorbidity	percentage
Thyroid disorders	62 (40.7%)	43	69.35
Diabetes mellitus	47(30.92%)	32	68.05
PCOD	28(18.4%)	16	57.1
Cushings syndrome	5(3.289%)	2	40
Acromegally	2(1.31%)	0	0
Addisions disease	1(0.65%)	0	0
Sheehan's syndrome	3(1.97%)	2	66.6
Miscellaneous	4(2.63%)	1	25

Table-5 Psychiatric Co-morbidity across Socio-demography of the Patients

		Present		Absent		p value
		n	%	N	%	
Dwelling	Rural	59	60.02	39	39.7	<0.005 (Sig)
	Urban	37	68.5	17	31.4	
Marital status	Unmarried	8	28.5	20	71.4	>0.005 (NS)
	Married	72	69.9	31	30	
	Widowed	16	76.1	5	23.8	
Occupation	Household	57	93.4	4	6.55	>0.005 (NS)
	Unskilled	14	48.2	15	51.7	
	Semiskilled	9	39.1	30	76.9	
	Skilled	14	60.8	9	39.1	
	Professional	2	25	6	75	
Family type	Nuclear	45	56.9	34	43.0	>0.005 (NS)
	Joint	22	78.5	6	21.4	
	Extended	29	64.4	23	51.1	
Literacy status	Illiterate	70	85.2	12	14.6	>0.005 (NS)
	Literate	26	36.1	46	63.8	
Family Income(Rs)	< 5000	17	37.7	28	62.2	>0.005 (NS)
	5000 to 10000	65	76.4	20	23.5	
	≥ 10000	14	63.6	8	36.3	
Socioeconomic status	Lower	18	50	18	50	>0.005 (NS)
	Upper lower	7	63.6	4	36.3	
	Middle	59	70.2	25	29.7	
	Upper middle	10	52.6	9	47.3	
	Upper	2	33.3	4	66.6	

Results

A total of 152 patients from the endocrinological departments of Govt. Medical College, Srinagar hospitals were taken up for study. They were evaluated in detail with regard to socio-demographic profile regard to presence of psychiatric co-morbidity by HADS and the results have been presented below in the tabulated form .Only patients who consented for complete interview and respond to all HADS questions were considered in final analyses.

Out of total 152 subjects 71 were males (46.72%)), and 81 were females (53.28%) (Table 1). Most of cases belong to 35-45 year age group (26.3%) followed by age group 25- 35 years (24.3%) and 67.7% were married and 18.4% were unmarried. More than half (51.97 %) of the study subjects were from nuclear families and 82 (53.9%) were illiterate and majority 84(55.4 %) belonging to middle class family. The socio-demographic profile of the studied patients is shown in Table-2.

Out of 152 patients with endocrine disorders, 56(37%) patients elicited HADS score of 10 or less indicating absent or doubtful association anxiety or depression. 96 (63.15%) patients were found positive to HADS Questionnaire with anxiety/depression score of 11 or more. The mean HADS score for anxiety alone, depression alone and anxiety/depression patients were 13.42, 15.7 and 25.62 respectively. On the basis of HADS screening, 96(63.157%) patients had varying degree of psychiatric co morbidity. 27 (28.12%) had anxiety alone, 30(43.47%) had depression alone where 39(40.62%) as patients had anxiety and depression both.(Table 3) The breakdown of total number of different Endocrinological disorders is given in table. Maximum psychiatric comorbidity is found in thyroid patients (69.35%) followed by diabetic patients (68.05) (Table 4).

Discussion

This study is the first to offer data on psychiatric morbidity among endocrine patients in the Kashmiri population. 63.15% (96) patients were found positive to HADS questionnaire with anxiety/depression score of 11 or more in our study. The results of this study suggest patient suffering from endocrinological disorders are likely to have a co-morbid psychiatric disorder. [5, 16]. Depressive disorders and anxiety disorders are the commonest psychiatric disorders in endocrinogical patients. [3].

Numerous studies have shown a high correlation between depression and endocrinological disorders and this study supports these findings, with 43.47 %(30) of the participants having depressive symptoms on the HADS. [3, 16] 40.62% (39) respondents had both depressive symptoms and an anxiety disorder. 28.12% (27) participants were diagnosed with an anxiety disorder, which is slightly higher than the lifetime prevalence of anxiety disorder in men [16]. Our findings of a high proportion of respondents with endocrinological disorders (45.7%) Female were more in number than their male counterparts 59(61.4%) vs. 37(38.54%) and the majority of men presenting with endocrinological disorders were between the ages of 35 and 45 years has also been reported in a previous studies. [4, 8].

The findings of our study suggest that psychiatric disorders are highly prevalent in endocrinological disorders and is largely unrecognized in the primary care setting. Endocrine disorders of different kinds, irrespective of treatment have been associated with Psychological distress. Psychological wellbeing of endocrine disorders may provide new insights in clinical endocrinology. Further psychological disorders comorbid with endocrinological disorders adds to their disability as well as cost

to the individual and the society.[17] Most of the clinicians do not suspect this important association of endocrinological disorders in the beginning resulting in delayed diagnosis. Thus, the high prevalence of anxiety and depression in endocrinological disorders in our study supports a case for screening for these disorders in endocrinological clinics. Furthermore, recognition and treatment of these comorbidities could improve patient outcomes.

Future studies should focus on replicating or refuting these findings in larger samples as well as in testing interventions aimed at targeting psychological morbidities in this patient group. Under-recognition of psychiatric morbidity is not an uncommon phenomenon, and has been found in similar local studies of psychiatric morbidity in other medical illnesses[8]. Thus, more attention should be paid to recognizing psychiatric morbidities in this group of patients.. The reasons for increase in the frequency of psychiatric disorders are multi-factorial. Having chronic illness leads to psychological stress.

The major limitation of our study was relatively small sample size. Another limitation of our study is its crossectional design, which does not allow us to determine direction of causality in the relationship between endocrinological disorders and depression/anxiety. More community based studies are required to assess the magnitude of the problem and to lay down principles to help such patients.In order to clarify the temporal relationship prospective studies with a bigger sample size are essential in the future. As far as we are aware, this is a first of its kind study in kashmir. Endocrinological disorders accounts for a huge proportion of referrals to psychiatric clinics and misery is added upon an already devastating metabolic disease. To add the cost associated with psychiatric morbidity accounts individual and to the society are substantial. Thus, the high prevalence of anxiety and depression in endocrinological disorders in our study supports a case for screening for these disorders in Endocrinological clinics. Furthermore, recognition and treatment of these comorbidities could improve patient outcomes.

Competing Interests
None declared

Author Details
SHEIKH SHOIB, MBBS MD Psychiatry, Senior Registrar, Department of Psychiatry, Government Medical College, Srinagar Kashmir, India. JAVID AHMAD, MD, Assistant professor Department of community Medicine, Sher-i-Kashmir Institute of Medical Sciences, Soura, Srinagar, India. AATIF RASHID, MD (Dermatology), Deramatologist, Department of Health, J K Health Services, Kashmir, India. HAMID SHAH, Assistant Professor Department of Microbiology and Immunology, IIVER, Rohtak, Haryana, India. RAHEEL MUSHTAQ, MD (Psy), Government Medical College, Srinagar, India. MANZOOR MALIK, Deparment of Biotechnolgy, Sher-i-Kashmir Institute of Medical Sciences (SKIMS), Srinagar, India.
CORRESPONDENCE: Dr. Sheikh Shoib, Senior Resident, Post Graduate Department of Psychiatry, Government Medical College, Srinagar Kashmir, India.
Email: sheikhshoib22@gmail.com

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