



Spectrum of Endocrine Disorders in Patients Attending Endocrine OPD in a Tertiary Care Hospital in Bangladesh

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Abstract

Endocrine disorders are primarily diseases of the pancreas, thyroid, parathyroid, pituitary, gonad, and adrenal glands, thusly, it constitutes a major health problem in all the societies. At present, an improved insight into the diagnosis, pathophysiology and molecular bases it is possible to diagnose the disorders earlier in their development. As a result of the treatment of the deficiency states for most hormones is successful. Furthermore, with recognition, many of these disorders are either the consequence of single-gene mutations or have a major genetic component. Therapies for the syndromes of hormone overproduction are less successful and frequently result in destruction of the endocrine organ involved and the treatment of hormone resistance states is similarly unsatisfactory. These disorders are candidates for the development of super agonists/antagonists and gene therapies. The overall objective of this study is to find out the frequency of endocrine disorders in patients attending endocrine OPD in Lab Aid Specialized Hospital, a tertiary care hospital in Bangladesh. Overweight and obesity are commonly subject to endocrine disorder. Thyroid disorders were significantly higher in female. Patients with TD had strong association with family history of TD. In this study 438 patients were enrolled endocrine department OPD. The study found that diabetes was the commonest introducing endocrine issue, trailed by thyroid organ issue and adrenal issue. Universally, diabetes and thyroid issue speak to the two commonest of endocrinological clutters.

Introduction

Endocrinology is a medical discipline of the twentieth century. The underlying spotlight was on the distinguishing proof and sanitization of hormones, portrayal of the regulatory processes that control their secretion, meaning of the

impacts of hormone shortage and overabundance, and depiction of the syndromes that outcome from such clutters. The accomplishments right now probably the most sensational utilizations of organic chemistry to medicine. By 1950, the chemical isolation and portrayal of pituitary,

parathyroid, pancreatic, adrenal, gonadal, and thyroid hormones made it conceivable in pretty much every occasion to supplant these hormones effectively in lack states. In the rest of the world assessments of pervasiveness rely upon the methods for ascertainment, however development of the thyroid organ is available in 8% or a greater amount of most populaces and in every case progressively visit in women^[1]. Hyperthyroidism is the most well-known thyroid reason for hospitalization and the same number of as 14% of ladies more seasoned than 60 years have hypothyroidism^[2, 3] diseases of all other endocrine organs consolidated are about half as regular as thyroid disease, in spite of the fact that assessments of predominance of these disorders likewise rely upon the methods for ascertainment. For example, parathyroid disease and pituitary tumors are presently being analyzed all the more much of the time as a result of improved diagnostic tests.

The 1990s saw a strikingly profitable digitation among genetics and endocrinology and among immunology and endocrinology. Hereditary tools gave improved diagnostic techniques. The portrayal of the mutations that cause huge numbers of the single-gene endocrine diseases made it conceivable to research the origin, transmission, and expression of the mutations mindful. The procedures of molecular genetics have been especially useful in growing knowledge into the complex pathophysiology of disorders of hormone receptors. With respect to loss of function mutations, for example, the receptor surrenders that debilitate the activity of androgens and thyroid hormones^[4, 5] the blend of absence of gifted HR, nonattendance of health infrastructure for endocrinological benefits, particularly in insightful instruments in middle income nations implies that these disorders are frequently missed and the diagnoses are postponed. Bangladeshis required to reveal more insight into the range of endocrine disorders and the accessible degree of care for patients with these disorders. Moreover, the weight and range

of endocrine disorders inside the network and the clinical settings should be portrayed in developing nations. This normally includes rational setting of needs taking into the account of the constrained assets distributed for it. Furthermore, of the clinical profile of patients will help policymakers, social insurance organizers, and administrators to arrive at educated choices on distribution regarding these assets to the different territories inside the medical subsector. In spite of the fact that medical clinic based information are definitely referral and accessed-one-sided, they give considerable knowledge into the sorts of diseases, the typical time of introduction, and their weight on inpatient service^[6]. Likewise, they, as it were, are mirror of the morbidity pattern in the networks.

Objective of the Study

The overall aim of this study is to find out the frequency of endocrine disorders in patients attending endocrine OPD in Lab Aid Specialized Hospital, a tertiary care hospital in Bangladesh.

Materials & Method

Endocrine disorders were classified according to the 10th revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10) as follows:

- 1) Thyroid gland and thyroid hormone abnormalities,
- 2) Disorders of the pancreas, insulin, and glucagon,
- 3) Parathyroid gland disorders,
- 4) Disorders of the pituitary gland,
- 5) Disorders of the adrenal gland,
- 6) Disorders of the gonads, and
- 7) Other disorders of the endocrine gland.

Clinical diagnoses were made by evaluating the patients' medical history and physical examination shadowed by the laboratory and radiological studies as required. The scope of the lab testing included fasting blood glucose; oral glucose resilience tests; glycated hemoglobin;

lipid profile; serum calcium; microalbuminuria; flawless PTH; erythrocyte sedimentation rate; complete blood tally; renal and liver capacity tests; thyroid autoantibody test; thyroid profile; and radiological testing including ultrasonography, X-beams, attractive reverberation imaging, and modernized tomography, where it was appropriate.

The data that recorded were age, gender and demographic and medical information of the patients. Means and standard deviation (\pm SD) were calculated and statistical analysis was implemented by using Excel 2007 and SPSS software.

Results

Demography and Frequency of Classes of Endocrine Disorders

Table 1: Demographic Description of the Patients. (n=438)

		Frequency(n)	Percentage (%)
Gender	Male	148	33.79
	Female	290	66.21
	Base	438	100.00
Religion	Islam	387	88.36
	Hinduism	50	11.42
	Christianity	1	0.23
	Base	438	100.00
Marital_status	Married	366	83.56
	Unmarried	72	16.44
	Base	438	100.00
Occupation	Housewife	187	42.69
	Unemployed	5	1.14
	Retired	20	4.57
	Student	68	15.53
	Teacher	17	3.88
	Engineer	4	0.91
	Doctor	6	1.37
	Businessman	44	10.05
	Others	87	19.86
		Base	438
		Frequency(n)	Percentage (%)
Education	Illiterate	12	2.74
	Primary	38	8.68
	SSC	98	22.37
	HSC	64	14.61
	Graduate	192	43.84
	Others	34	7.76
	Base	438	100.00
socioeconomic_status	Lower class	1	0.23
	Middle class	369	84.25
	Upper class	68	15.53
	Base	438	100.00

Table 2 describes the mean values and the standard deviation of the 438 patients’ medical descriptions:

Table 2: Medical Description of the Patients. (n=438)

	Mean	Std. Deviation(±)	Frequency
Age	40.55	15.38	438
weight_in_kg	67.44	14.24	433
Height_in_cm	159.16	9.68	410
Wt / Ht / BMI	67.44	14.13	427
BP_High	122.81	16.48	336
BP_Low	79.71	9.37	336
Hb (g/dL)	12.59	2.88	102
MCV(g/dL)	73.43	18.84	16
ESR (g/dL)	33.94	26.39	18
FBS (mmol/L)	11.15	14.27	167
2h ABF (mmol/L)	12.73	9.86	128
HbA1c (%)	8.20	1.85	144
Creatinine/eGFR (umol/L)	106.32	47.90	130
SGPT (U/L)	40.65	23.99	101
Urine_RME	5.53	9.23	10
Urine_pc	10.25	8.66	4
Uric Acid (umol/L)	159.10	179.02	15
Lipid_Ch (mg/dL)	160.28	73.11	94
Lipid_H (mg/dL)	44.18	38.27	93
Lipid_L (mg/dL)	87.41	48.84	93
Lipid_TG (mg/dL)	188.13	175.96	93
S. Albumin (gm/dL)	27.00	19.97	3
S. Electrolytes_Na (mmol/L)	139.57	4.27	47
S. Electrolytes_K (mmol/L)	4.18	0.51	47
S. Electrolytes_CI (mmol/L)	99.25	14.09	46
S. Electrolytes_Hco3 (mmol/L)	27.45	4.79	45
FT4 (pmol/L)	5.79	8.58	124
TSH (uIU/mL)	7.84	16.46	267
T3 (ng/ml)	107.70	160.33	18
FT3 (pg/mL)	5.92	6.33	12
Anti_TG_(IU/L)	276.77	465.79	58
Anti_TPO_(IU/L)	454.28	541.52	57
S. Calcium (mg/dL)	6.89	3.55	22
PTH (pg/mL)	133.50	45.54	2
25 Ohvit D (ng/mL)	19.96	8.18	16
Testosterone(nmol/L)	11.96	22.52	28
LH (IU/L)	8.11	5.64	35
FSH (IU/L)	15.15	20.97	29
Prolactin(ng/mL)	53.48	94.81	37
Semen Analysis	1.00		1
Midnight Sal Cort	2.00		1
ACTH (pg/ml)	26.06	15.42	17
Basal Cort/Post Synacthen (nmol/L)	127.38	232.51	24
17 OHP (ng/mL)	1.70	1.14	6
RF	4.00		1

Pancreas Insulin and Glucagon Disorder

Out of 438 patients, non DM 53.42%, type 2 DM 43.84%, GDM 1.60%, type 2 DM 0.68% and others specific type 0.46% respectively.

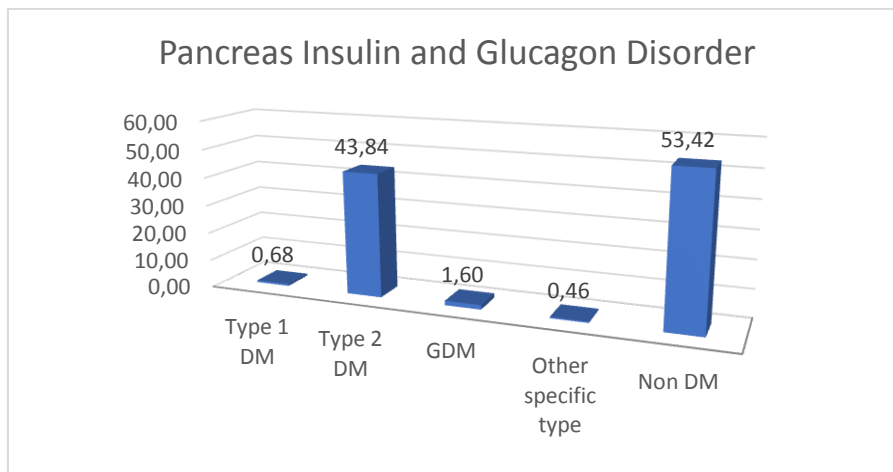


Figure 1: Pancreas Insulin and Glucagon Disorder. (n=438)

Thyroid Gland and Hormonal Disorders

Out of 438 samples, 48.63% were nil. Hypothyroidism 40.41%, Hyperthyroidism

8.68%, Thyroiditis & others thyroid diseases are 1.14% both in percentage figure.

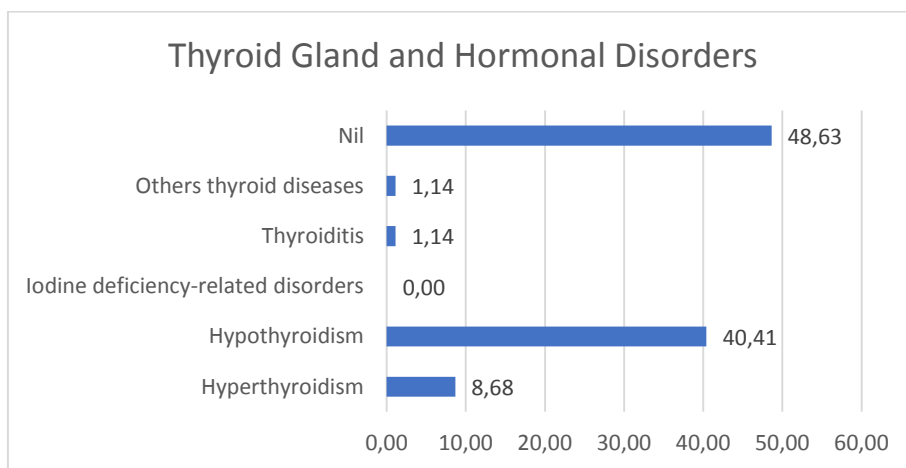


Figure 2: Thyroid Gland and Hormonal Disorders. (n=438)

Parathyroid and Calcium Metabolic Disorders

Out of 438 total samples 2% patients had parathyroid and calcium disorders; 5 of them were females and 3 were males with a female:male ratio of 2.4:1 Parathyroid carcinoma was determined dependent on ultrasound highlights to have an authoritative determination produced

using histological assessment of precisely evacuated organs. Treatment included medical procedure for patients who had hyperparathyroidism and, now and again, clinical treatment with oral calcium and bisphosphonates. For parathyroid carcinoma, the backbone of treatment was careful extirpation.

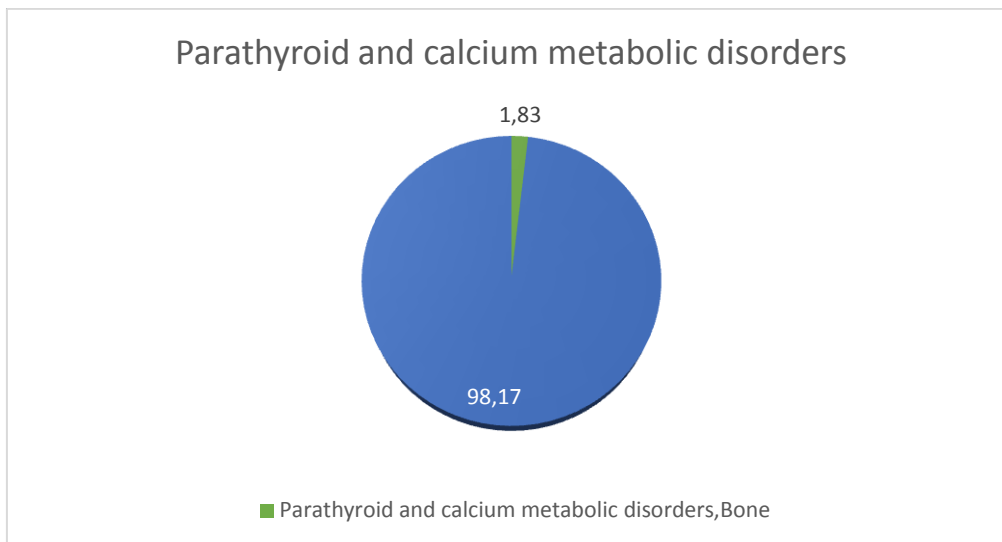


Figure 3: Parathyroid and Calcium metabolic Disorders. (n=438)

Pituitary Disorders

2.1% of the 438 samples were diagnosed with pituitary and hypothalamic gland disorders.

The table 3 shows the types of the pituitary disorders that were identified. 61.5% had pituitary adenomas, 5 (1.14%) were diagnosed with

prolactinoma, only 1 (0.23%) patients presented with acromegaly, none (0.00%) with Cushing's disease. Pituitary deficiency was found in 2 patients, both 35 years of age from the Sheehan's disorder.

Table 3: Pituitary and Hypothalamic Gland Disorders. (n=438)

Pituitary and Hypothalamic Gland Disorders	Acromegaly	1	0.23
	Cushing's disease	0	0.00
	Prolactinoma	5	1.14
	Short stature	1	0.23
	Tall satature	0	0.00
	Nil	428	97.72
	8	3	0.68
	Base	438	100.00

Adrenal Disorders

9 samples out of the 438 were identified to have with adrenal disorders. 5 (1.14%) had Cushing's syndrome, 4 (0.91%) had Addisons and none were diagnosed with primary hyperaldo or adrenal carcinoma as shown in Table 4.

Those with Cushing's syndrome, 3 of them were females and 2 were males. 14 of the patients that were diagnosed with adrenal insufficiency had HIV-associated adrenalitis, and 2 of them had disseminated tuberculosis.

Table 4: Adrenal Disorders. (n=438)

Adrenal Disorders	Cushing's syndrome	5	1.14
	Primary hyperaldo	0	0.00
	Adrenal carcinoma	0	0.00
	Adrenal pheo	0	0.00
	Addisons	4	0.91
	Nil	429	97.95
	Base	438	100.00

Gonadal Disorders

Only 10 patients out of the 438 samples were admitted in the hospital on the account of gonadal disorder. 7 males had Klinefelter's syndrome and the other 3 had Turner's syndrome. These diagnoses were based on semen analysis, genetic studies, and testicular biopsy and supported by ultrasound studies as required.

Others

1.14% of the samples found to be had familial dyslipidemias, 3 (0.68%) for metabolic syndrome, 21 (4.79%) for obesity, 0 (0.00%) for multiple endocrine neoplasia type 1, and 0 (0.00%) for multiple endocrine neoplasia type 2.

Discussion

Universally, diabetes and thyroid disorders are two of the most common endocrinological issue^[7-9] seen in adult endocrine specialist practice. Consequently, the range of endocrinological disorders in Bangladesh represent that fact with various different studies. Most investigations like this one, were review in plan and concentrated on inpatient confirmations. The significant patron of endocrine cases alluded to the center was diabetes, speaking of 79% of the referrals. This finding is predictable with reports of an expanding predominance of diabetes in Bangladesh^[10-14]. The increasing paces of diabetes in Bangladesh is exclusive to the expanding life span of their populace and the enhancements in the financial status, prompting urbanization and reception of western ways of life that are filling in as propensities for an epidemiological progress^[15, 16]. Appropriately, the populace predominance of vascular hazard factors, specifically, stoutness, physical idleness, and poor dietary practices, has raised in a few nations coming full circle in the heightening paces of cardiovascular diseases and nutritional disorders, chiefly diabetes and ischemic heart infections, on the mainland^[17-23]. Thus, it isn't astonishing that diabetes keeps on being the commonest endocrine disorder in our nation. Thyroid disorders have expanded in recurrence with changing epidemiology from

iodine deficiency-driven scatters to thyroid autoimmunity disorders in Bangladesh^[26, 27]. This adjusts to discoveries in our examination where hypothyroidism was the most predominant thyroid disorder seen over the time of the investigation, in spite of past examinations where iodine deficiency disorders were the most regularly watched thyroid issue^[28-30]. The changing epidemiology of thyroid diseases saw in many regions of iodization can be ascribed to progress in iodine nutrition^[31]. Be that as it may, unregulated iodination has plagued most nations particularly in low-salary areas^[31-33]. There was critical female sex inclination among patients with thyroid disease as recently detailed with a proportion of 4:1 contrasted with males. This is like discoveries from different investigations where females commanded thyroid disease incidence^[31 32]. Moreover, there is less nuclear medicine administration accessible for use, and consequently, radio imaging and radioiodine therapy are not set up for the patient's advantages. Adrenal disorders spoke to the third commonest endocrine disorder found in our facility. The most widely recognized disorders as observed in different examinations were Addison's disease and Cushing's syndrome^[34-36]. The leading body of by far most of the endocrine issue has been tried by nonattendance of analytic assistance for patients. CT and MRI machines are not accessible all through the nation. These obstructions have influenced on our ability to develop and sub classifies endocrine issue at the present time. Again, the nonattendance of atomic imaging offices hampers both separating confirmation and treatment of adrenal similarly as thyroid and parathyroid issue. The examination, in any case, has had the alternative to show extending amounts of patients visiting the endocrine facility. The prerequisite for the readiness of more endocrinologists has gotten logically sincere to improve quality and models of care.

Conclusion

We can conclude that endocrine abnormalities are a common finding in patients. Endocrine disorders can be exhibited predominantly by various diseases of pancreas thyroid, parathyroid, pituitary, gonad and adrenal glands which constitute a major health problem in the society. Early diagnosis and treatment of hormonal imbalance may reduce the risk of such catastrophe. The diagnosis for adrenal insufficiency involved short synacthen test; for those with Cushing's syndrome, dexamethasone suppression test was used for diagnosis with plain abdominal X-rays and CT scans used for confirmation of patients with abdominal tuberculosis. Pheochromocytomas were diagnosed mainly by histology and hormonal assay testing. The scope of prescriptions recommended for pituitary issue included bromocriptine, ketoconazole, and octreotide. For patients with macroadenomas and the individuals who flopped in oral treatment and radiotherapy were orchestrated locally and if conceivable globally. Particular obesity is a vital factor of endocrine disorder. It is therefore important to encourage weight reduction among the patients in our country.

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