

Presentations and Outcome of Thyroiditis from a Tertiary Care Hospital of Karachi

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ABSTRACT

Objective: To assess the clinical presentations and short-term outcomes of patients with thyroiditis presenting to a tertiary care hospital in Karachi, Pakistan.

Study Design: Case series.

Place and Duration of Study: Department of Endocrinology, Liaquat National Hospital, Karachi, from June 2014 to February 2015.

Methodology: Patients between 18 and 70 years of age with acute onset of thyroiditis confirmed on thyroid scan or clinical judgment presenting to the outpatient services were included in the study. Pregnant females, psychiatric patients and patients having other chronic illnesses were excluded from the study.

Results: A total of 26 patients with thyroiditis attended the endocrine clinic. Mean age of patients was 41.2 ± 11.12 years. There were 18 (69.2%) females. Clinical presentations were fever (65.4%), tender neck (23.1%), goiter (19.2%), localized tenderness in neck and palpable lymph nodes (26.9%). Major symptoms reported were: sore throat (69.2%), weight loss (38.5%), upper respiratory tract infection, thyroid pain, tremor, sweating and fever of unknown origin in 26.9% cases. All the patients had raised Erythrocyte Sedimentation Rate (ESR). Low Thyroid Stimulating Hormone (TSH) < 0.4 mIU/L was seen in 88.5% and 57.7% had raised Free T4 > 1.8 ng/dL. Complete recovery was seen in 88.5% patients while 11.5% had early hypothyroidism.

Conclusion: Fever and sore throat were the main presenting features of thyroiditis patients. ESR was raised in all patients. A majority of patients had complete recovery with appropriate management; however, few cases developed hypothyroidism.

Key Words: Presentations. Outcome. Thyroiditis.

INTRODUCTION

Thyroiditis is 'the disorder in which there is inflammation of the thyroid gland'.¹ There can be different causes of thyroiditis, which can be either acute, subacute or chronic. Tuberculous thyroiditis and postpartum thyroiditis are other forms of thyroiditis. Subacute thyroiditis (de Quervain thyroiditis or granulomatous thyroiditis) is a rare self-limiting disorder² and possibly caused by viral infection. Cases of thyroiditis have been reported with mumps, measles, coxsackie and adenovirus.³ In rare cases, subacute thyroiditis may be the manifestation of expanded dengue syndrome.⁴ Acute thyroiditis (suppurative thyroiditis) is caused by bacterial infection and managed through antibiotics. However, thyroiditis can be caused by certain drugs like amiodarone, interferon-alfa, interleukin-2, or lithium.

Riedel's thyroiditis is due to infiltration of the thyroid gland with fibrous tissue. *Aspergillus thyroiditis* is a rare form of thyroiditis caused by fungus. Hashimoto's thyroiditis (chronic lymphocytic thyroiditis) is due to organ-specific autoimmune disease.

Clinical features of subacute thyroiditis include symptoms of hyperthyroidism along with throat pain, myalgias, pharyngitis, low grade fever and fatigue.⁵ Patients can present with fever, severe neck pain, swelling or both.⁶ Suppressed levels of Thyroid Stimulating Hormone (TSH), raised Erythrocyte Sedimentation Rate (ESR), low thyroid uptake of radioactive iodine on thyroid scan.⁷ Tissue diagnosis is rarely required to establish the diagnosis. In most of the cases of subacute thyroiditis symptomatic treatment containing Non-steroidal Anti-inflammatory Drugs (NSAIDs) are used, however, corticosteroids effectively relieve the symptoms. Levothyroxine is indicated in the hypothyroid phase of the disease process. The disease usually resolves completely over weeks or months. Sometimes, there are repeated episodes of inflammation of thyroid gland.⁸

The incidence of thyroiditis is low; hence, these cases are often missed by the physicians and are usually over investigated. Thyroiditis cases are sometimes treated as Pyrexia of Unknown Origin (PUO) and later found to

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have this problem. It was against this background that the present study was designed.

The objective of the study was to assess the clinical presentations and short-term outcomes of patients with thyroiditis presenting to a tertiary care hospital in Karachi, Pakistan.

METHODOLOGY

This prospective case series was carried out in the Department of Endocrinology, Liaquat National Hospital (LNH), Karachi, from June 2014 to February 2015. LNH is a tertiary care hospital and is serving urban as well as rural areas patients. Ethical approval was obtained from LNH (0154-2014 LNH-ERC), before conducting the study. All patients between 18 and 70 years of age, willing to participate in the study, with acute onset of thyroiditis confirmed on thyroid scan or clinical judgment (in cases of contraindication of thyroid scan), presenting to the outpatient services were included in the study. Patients were followed for 4 months during this study. Pregnant females, psychiatric patients and patients having other chronic illnesses were excluded from the study. Informed written consent was taken prior to enrolling the patients in the study.

This was a longitudinal descriptive study and 26 patients were enrolled. Demographics including age, gender, clinical presentations, systemic symptoms and clinical examination of the thyroid were noted. Signs and symptoms, laboratory investigations including ESR and thyroid function tests (TSH, free thyroxine [FT4], triiodothyronine [FT3]) and results of radio-nuclear thyroid scan were noted. Treatment given to the patients and short-term outcome within 4 months of treatment (complete recovery, early recurrence, early hypothyroidism, nodular goiter, associated autoimmune disease or malignancy) was also recorded.

Descriptive analysis was performed for socio-demographic characteristics, clinical features, laboratory findings, choice of treatment and treatment outcome. Frequency with percentage was calculated for qualitative variables and mean with standard deviation was computed for quantitative variables. Data was collected and later analyzed using Statistical Package for the Social Sciences (SPSS) version 19.

RESULTS

The socio-demographic characteristics of the patients are shown in Table I. Mean age was 41.2 ± 11.12 years. Majority of patients were between 21 and 49 years (76%, n=20). Females (69.2%, n=18) outnumbered males (30.8%, n=8). Majority of the patients belonged to Sindhi ethnicity (88.5%, n=23) and were married (76.9%, n=20). More than half of patients were educated above intermediate (57.7%, n=15).

Clinical presentations of thyroiditis in enrolled patients are shown in Table II. The major sign observed was fever (65.4%, n=17), followed by tender neck (23.1%, n=6) and goiter (19.2%, n=5), localized tenderness in neck and palpable lymphnodes (26.9%, n=7). Major symptoms reported was sore throat (69.2%, n=18), followed by weight loss (38.5%, n=10) and complaints of Upper Respiratory Tract Infection (URTI) (26.9%, n=7). Least reported symptoms were arthralgia and myalgia (19.2%, n=5).

Table III shows type of treatment taken and laboratory investigations of thyroiditis patients. Almost two thirds (61.5%, n=16) took a combination of NSAIDs and

Table I: Socio-demographic characteristics of the patients (n=26).

Demographics	Patients (percentages)
Age (years)	
Mean 41.2 ± 11.12	
21 - 39	10 (38.5%)
40 - 49	10 (38.5%)
50 and above	6 (23.1%)
Gender	
Male	8 (30.8%)
Female	18 (69.2%)
Ethnicity	
Sindhi	23 (88.5%)
Balochi	3 (11.5%)
Marital status	
Single	4 (15.4%)
Engaged	2 (7.7%)
Married	20 (76.9%)
Education	
No education	4 (15.4%)
Matriculation and below	7 (26.9%)
Intermediate and above	15 (57.7%)
Employment	
Employed	10 (38.4%)
Student	2 (7.7%)
Housewives	14 (53.8%)

Table II: Clinical presentations (signs and symptoms) of thyroiditis in enrolled patients.

	Numbers	Percentages
Signs		
Fever	17	65.4%
Goiter	5	19.2%
Tender neck	6	23.1%
Localized tenderness in neck	7	26.9%
Palpable lymph nodes	7	26.9%
Symptoms		
URTI	7	26.9%
Sore throat	18	69.2%
Thyroid pain	7	26.9%
Arthralgia	5	19.2%
Myalgia	5	19.2%
Tremor	7	26.9%
Sweating	7	26.9%
Weight loss	10	38.5%
Pyrexia of unknown origin	7	26.9%

Table III: Therapy and laboratory findings of thyroiditis patients.

	Number	Percentages
Therapy		
NSAIDs alone	5	19.2%
Corticosteroids alone	4	15.4%
NSAIDs + Corticosteroids	16	61.5%
Corticosteroids with other therapy	1	3.8%
Acetaminophen	0	0%
Thyroidectomy	0	0%
Investigations		
Raised Free T4 (> 1.8 ng/dL)	15	57.7%
Low TSH (< 0.4 ml U/L)	23	88.5%
Raised ESR	26	100%

corticosteroids. Five patients (19.2%) were on NSAIDs alone while 4 patients (15.4%) were exclusively on steroids. Only one patient took other therapy with steroids. Majority (88.5%, n=23) had low TSH of < 0.4 mIU/L. More than half (57.7%, n=15) ng/dL had raised Free T4 of > 1.8 ng/dL. All the patients had raised ESR. Majority (88.5%, n=23) ml U/L had complete recovery while 3 patients among them (11.5%) ended up with early hypothyroidism.

DISCUSSION

Thyroiditis is an uncommon but treatable endocrine disorder. In Pakistan, there is limited data on thyroiditis, therefore, the exact magnitude of this disorder and the prevalence is not known. This may be due to the reasons that there are limited trained endocrinologists and few postgraduate training centres in the country. We believe that this is the first study in Pakistan that has observed the clinical presentations and short-term outcomes of patients with thyroiditis. Thyroiditis cases are often missed as it is a rare disorder and represents 0.16 - 3.6% of all thyroid disorders.⁹ Alfadda *et al.* reported that there were only 25 patients of confirmed thyroiditis during an 8-year time period.¹⁰ However, almost similar numbers of patients were seen during a 4 months period in the present study from Pakistan. This shows that thyroiditis is more common in this part of the world. It is important to investigate the outcome of thyroiditis in different ethnic groups and different countries, as genetic factors influence susceptibility to viral pathogens.¹¹ Despite of limitations, this study highlights some interesting findings. Fifty eight percent of our cases had raised free T4; however, Qari *et al.* reported that all (23 cases) had elevated free T4.⁹

Eighty one percent of the patients in the study received corticosteroids either alone or in combination with other medications for the treatment of thyroiditis which is higher than reported by Fatourehchi *et al.* (36% cases) in 160 thyroiditis patients treated in Olmsted County, Minnesota, during 39 years period.¹² Alfadda *et al.* had a long-term follow-up of patients and demonstrated that 85.7% of the cases recovered and 14.3% of the patients

developed hypothyroidism.¹⁰ These results were consistent with the results of our study. Hypothyroid phase can occur after thyroiditis and may last for few months.¹³ In the current study 11.5% of the patients developed hypothyroidism during short-term follow-up. Hence, a 4-month follow-up of thyroiditis patients gave similar results in terms of occurrence of hypothyroidism as compared to long-term follow-up.¹⁰ It was also observed in the current study that 80.7% of the patients were treated with corticosteroids. This treatment was not a common medical management in one of the centres of Kingdom of Saudi Arabia¹⁰ and Fatourehchi *et al.* found that corticosteroids did not protect against causing hypothyroidism in the initial phase of disorder.¹² This observation needs to be studied further.

Women are more affected as compared to men and middle age adults.^{14,15} Similar results are seen in the current study. Patients of subacute thyroiditis can present as fever of unknown origin.^{16,17} This is also seen in the present study as 65% of the patients had fever and this should be kept in mind that patients of PUO may have occult thyroiditis. In the literature, it has been suggested that there is a role of C-reactive protein (CRP) in inflammatory thyroid disorders.¹⁸ However, we were unable to check the CRP levels due to the high cost of this investigation. Instead, we checked ESR, also a marker of inflammation, which was raised in all the patients.

The study has certain limitations. The major one is that the patients were followed for only 4 months. There is a possibility that some patients may develop hypothyroidism in long-term follow-up. The results originate from a single private hospital of Karachi and may not be generalizable to other centres of the country. Similar studies in future, with a long-term follow-up, be conducted from both public and private hospitals of Pakistan.

CONCLUSION

The present study found that majority of patients with thyroiditis presented with fever and sore throat and had complete recovery in short-term follow up. However, few cases developed hypothyroidism. ESR was raised in all the patients of thyroiditis. Further studies are needed with longer follow-up to look at the possible long-term complications of this disease from different regions of Pakistan.

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