

**Original article****SUBACUTE THYROIDITIS, DIAGNOSTIC CRITERIA AND MANAGEMENT: AN INSTITUTIONAL STUDY.**

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**Abstract****Introduction:**

Subacute Thyroiditis (SAT) is an uncommon self limiting condition characterized by neck pain and / or neck tenderness. The disease is thought to have a viral origin, however the exact etiology of SAT is unknown.

**Study design:**

Prospective Study.

**Material and Method:** The study was carried out in the department of ENT & HNS at SKIMS –MCH Bemina J and K, India for a period of 1 ½ years. Diagnosis of sub acute thyroiditis was made on the basis of history of pain in the anterior neck, tenderness of thyroid gland, increased ESR and USG findings.

**Results:** 21 patients were included in the study. Out of these patients, 14 (66.7 %) patients were females and 7(33.3%) patients were males. Highest incidence of SAT was found in the age group of 41-50 (47.7%) years. Pain and tenderness along with raised ESR and CRP were observed in all patients at the time of presentation. Thyroid function test at the time of presentation revealed a suppressed TSH and elevation of FT4 and FT3 levels.

**Conclusion:** There is a need to increase the awareness among initial health care providers about this condition. It will help in early diagnosis, thus reducing the morbidity and duration of illness besides avoiding unnecessary antibiotic prescription.

**JK-Practitioner 2021;26(1):15-18****Introduction**

Subacute Thyroiditis (SAT), also known as subacute granulomatous thyroiditis, subacute painful thyroiditis, migratory thyroiditis, non-suppurative thyroiditis, granulomatous and De-quervains thyroiditis, is an uncommon self limiting condition and is the most common cause of painful thyroiditis, characterized by neck pain and / or neck tenderness with elevation of erythrocyte sedimentation rate ( ESR) and C- reactive protein (CRP) and high serum thyroid hormone concentration. SAT was first described in 1904 by Fritz De-Quervain and its incidence is reported to be 3.6 -4.9 per 100,000 population and most commonly affects middle aged females<sup>1</sup>.

The disease is thought to have a viral origin, however the exact etiology of SAT is unknown. Clinically, the condition is associated with severe pain that is usually localized to the anterior aspect of the neck that may radiate up to the jaw or ear. There is low grade fever, fatigue and mild thyrotoxic manifestations. The thyroid gland is tender to touch and small nodules are frequently found upon palpation. TSH levels are suppressed, ESR and CRP levels are elevated and there is poor or no thyroid uptake. Anti-thyroid peroxidase (anti-TPO) and Anti-thyroglobulin (anti-Tg) antibodies are usually negative<sup>2</sup>. Increased thyroid size, irregular thyroid margins and heterogeneous parenchyma are observed on

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**Key words:**

Subacute Thyroiditis (SAT),  
Tenderness, USG Neck, Diagnosis

ultrasonography<sup>3</sup>. The diagnosis of SAT is made on clinical signs and symptoms, laboratory results and USG findings. Tissue diagnosis is rarely needed<sup>1</sup>.

#### MATERIAL AND METHODS:

This Prospective study was carried out on patients attending the OPD of ENT & HNS department at SKIMS –MCH Bemina J&K, India for a period of 1½ years. Diagnosis of SAT was made on the basis of history of pain in the anterior neck, tenderness of thyroid gland, increased ESR and USG findings.

#### Inclusion criteria:

Patient with anterior neck pain and tenderness of thyroid gland at the time of presentation.

#### Exclusion criteria:

Patients with Goitre or any neoplastic swellings.

All the patients were subjected to detailed clinical examination, laboratory investigations and ultrasonography of neck at the time of presentation.

All the patients were followed up weekly for four weeks to assess the improvement or otherwise of clinical symptoms. Relevant laboratory investigations were repeated at fourth week. Thyroid profile was again repeated in all patients at 24th week.

#### RESULTS:

21 patients were included in study, of which 14 (66.7 %) patients were females and 7 (33.3%) patients were males. Highest incidence was seen in the age group of 41-50 years (47.7%). [Table 1]

**Table 1: Age and Gender Distribution**

Age group(yrs)	Male	Female	Total	%
21-30	1	1	2	9.5
31-40	1	4	5	23.8
41-50	3	7	10	47.7
51-60	1	2	3	14.3
61-70	1	-	1	4.7
Total	7	14	21	100

7 (33.33%) patients had history of upper respiratory tract infection in the preceding 3-4 weeks before the onset of SAT.

All (100%) patients had pain at the time of presentation and only 3 (14.3%) patients had fever. 18 (85.7%) patients had temperature < 38°C and 3 (14.3%) patients had temperature between 38.1°C and 39.4°C. Tenderness was present in all patients, involving left lobe in 12 (57.2%) patients, right lobe in 8 (38.1%) patients and entire gland in 1 (4.7%) patient. Palpable nodules were noted in 3 (14.3%) patients [right side 1 patient, left side 2

patients]. [Table 2]

Average time from the onset of symptoms to the diagnosis was 2 weeks. 15 (71.43%) patients were prescribed antibiotics by initial healthcare providers for an average period of 8-10 days.

**Table 2: Clinical presentation of patients with SAT**

Clinical presentation		No of Patients	%
Sign & symptoms	Pain	21	100
	Fever	3	14.3
Temperature	>38°C	3	14.3
	<38°C	18	85.7
Tenderness	Right lobe	8	38.1
	Left lobe	12	57.2
	Entire Gland	1	4.7
	Total	21	100
Palpable Nodule	Right side	1	4.7
	Left side	2	9.5
	Total	3	14.3

In all patients, primary ESR and CRP were elevated with mean ± SD of 56 ± 38.2 mm/h and 54.2 ± 35.2 mg/dl respectively.

Thyroid function test at the time of presentation revealed a suppressed TSH and elevated FT4 and FT3 levels with mean ± SD of 0.2 ± 0.4 mIU/L, 2.8 ± 1.4 ng/dl and 711 ± 325 pg/dl respectively and second time TFT at the 4th week revealed normal TSH, FT4 and FT3 levels in 15 (71.4%) patients. The thyroid profile at 24th week revealed normal TSH, FT4 and FT3 levels with mean ± SD of 2.5 ± 2.4 mIU/L, 1.4 ± 0.9 ng/dl and 250 ± 110 pg/dl respectively. [Table 3A & 3B]

**Table 3 A: Laboratory Results at the time of presentation**

Laboratory Test	Mean ± SD	Reference Range
TSH	0.20 ± 0.4	0.5-6 mIU/L
FT4	2.8 ± 1.4	0.7-1.9 ng/dl
FT3	711 ± 325	230-619 pg/dl
ESR	56 ± 38.2	0-22 mm/h (Male) 0-29 mm/h (Female)
CRP	54.2 ± 35.2	<3.0 mg/dl

**Table 3 B: Repeat (Thyroid function test at 24th week)**

Laboratory test	Mean ± SD
TSH	2.5 ± 2.4 mIU/L
FT4	1.4 ± 0.9 ng/dl
FT3	250 ± 110 pg/dl

On ultrasonography SAT lesions were hypochoic, heterogeneous and nodular in 21 (100%) patients, 18 (85.7%) patients and 3 (14.3%) patients respectively. The mean size of SAT lesion was 29.4 mm (ranging 5-46mm) and the vascularization of SAT lesion was decreased in 16 (76.2%) patients, normal in 3 [14.3%] patients and increased in 2 (9.5%) patients.

**Table 4: Sonographic characteristics of SAT lesions.**

Sonographic features		No. of Patients
Echogenicity	Hypochoic	21
	Heterogeneous	18
Nodular lesion		3
Vascularity	Decreased	16
	Normal	3
	Increased	2

Steroids were administered in all patients. Oral steroids in the form of Prednisolone 0.5 mg/kg /day or equivalent doses of methyl prednisolone were given in the first week and then tapered over a period of 1-2 weeks as per the Improvement of symptoms. The mean duration of steroid use was 14 days. Some patients were prescribed NSAIDS along with intraoral steroids.

At 24<sup>th</sup> week thyroid profile was within normal range in 17 (80.96%) patients and revealed hypothyroid status in 4 (19.04%) patients.

#### DISCUSSION:

This prospective study was conducted in Department ENT & HNS, SKIMS MCH Bemina, Srinagar.

In our study maximum number of patients i.e 47.7% were in the age group of 41- 50 years. Similar observation was made by Elbaken G1, Vahabet. Al<sup>4</sup>. In our study incidence of disease was more common in females (66.7% patients.) In the study conducted by Cappli et.al<sup>5</sup>, the gender preference towards females [F:M ratio of<sup>6</sup>:1] was also noted.

In the present study 7 (33.33%) patients had history of upper respiratory tract infection in the preceding 3-4 weeks. The study by E.Nishihara et.al<sup>6</sup> observed the similar pattern in history in 23% patients.

Our main criteria of diagnosing SAT was painful thyroid gland and it was present in all patients (100%). Similar observation was made by Vahab et.al<sup>4</sup>. In their study thyroid pain was present in 90 (95.8%) patients and absent in 4 (4.2%)

patients.

In our study palpable nodules were noted in 3(14.3%) patients. Similar observation was made by Vahab et.al<sup>4</sup>, who reported palpable nodules in 21(22.3%) patients.

In the present study 15 (71.43%) patients had received either single or more than one course of antibiotics for an average period of 8-10 days by initial healthcare providers without reducing or alleviating any of the symptoms of SAT. Similar observations have been made by M.Stasiak et.al<sup>7</sup> and they have recommended against the use of antibiotics.

The hallmark of SAT is markedly elevated ESR. ESR is usually higher than 50mm/hr in initial phase in upto 70 % of patients as reported by Jenice et al<sup>8</sup> & E Nishihare et.al<sup>6</sup>. Our study is consistent with above studies i.e. primary ESR was elevated with mean  $\pm$  SD of  $56 \pm 38.2$  mm/hr.

In our study TFT at the time of presentation revealed a suppressed TSH and elevated FT4 and FT3 levels with mean  $\pm$  SD of  $0.2 \pm 0.4$  mIU/L,  $2.8 \pm 1.4$  ng/dl and  $711 \pm 325$  pg/dl respectively. Similar observations were made by Assim et.al<sup>2</sup>.

In our study on ultrasonography SAT lesions were hypochoic, heterogeneous and nodular in 21 (100%) patients, 18 (85.7%) patients and 3 (14.3%) patients respectively. Similar observation was made by M Stasiak et.al<sup>9</sup>

In our study mean size of SAT lesion was 29.4mm (ranging from 5-46mm). Similar size range was observed by Vural et.al<sup>10</sup>. who described lesion size in the range of 7- 71mm in a group of 20 SAT patients.

In our study, the vascularisation of SAT lesion was decreased in 16 (76.6%) patients, normal in 3 (14.3%) patients and increased in 2 (9.5%) patients. Similar observation was made by M Stasiak et.al<sup>9</sup>. In the literature, persistent hypothyroidism was reported in 14.3 to 25% of patients after an episode of SAT<sup>2,4</sup>. In our study 4 (19.04%) patients had persistent hypothyroidism.

#### Conclusion

SAT is an uncommon condition and the criteria for diagnosis are pain and/ or tenderness of thyroid gland/Lobe, elevation of ESR and / or CRP and elevation of FT4 and suppression of TSH with USG findings of hypochoic area with decreased vascularisation. Even though diagnosis is mainly on clinical presentation, easily available laboratory investigations and USG neck, the diseases is usually missed by initial healthcare providers.

There is need to increase the awareness among initial healthcare providers about this condition. It

will help in early diagnosis ,thus reducing the morbidity and duration of the disease besides avoiding unnecessary antibiotic prescription.

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