

Serum TSH levels are significantly lower within 30 days after the onset of subacute thyroiditis and remain so for over 60 days, but other routine laboratory tests show little change

Nishihara E, Ohye H, Amino N, Takata K, Arishima T, Kudo T, Ito M, Kubota S, Fukata S, Miyauchi A. Clinical characteristics of 852 patients with subacute thyroiditis before treatment. Intern Med 2008;47:725-9.

SUMMARY

BACKGROUND Subacute thyroiditis (SAT) is a self-limiting inflammatory disorder of the thyroid. It is the most common cause of painful thyroid and may account for up to 5% of clinical thyroid abnormalities. This study of 852 patients aimed at further documenting the clinical characteristics of the disorder based on laboratory and imaging studies before treatment.

METHODS The subjects were patients with SAT who were cared for at the Thyroid Clinic at Kuma Hospital in Japan from 1996 through 2004. The diagnosis was based on clinical features of thyroid swelling, pain, and tenderness; an elevated C-reactive protein (CRP), elevated serum free thyroxine (FT₄), and decreased serum thyrotropin (TSH) levels or suppressed 24-hour radioiodine uptake (RAIU); negative or weakly positive serum antithyroid antibodies; and an ultrasound hypoechogenic area in a region of thyroid tenderness. The onset of SAT was defined as the time at which thyroid pain and tenderness developed. Serum levels of aspartate aminotransferase (AST), alanine aminotransferase (ALT), and CRP were also measured. To evaluate the acute phase of SAT before treatment, laboratory and imaging studies were divided into three groups: <7 days, 30±5 days, and >60 days.

RESULTS A total of 852 patients were retrospectively enrolled in the study. There were 745 women (87%) and 107 men (13%) whose mean (±SD) age was 47.8±9.4 years (range, 22 to 83; median, 48) (Figure 1). Almost all the patients (96%) visited the hospital within 45 days after the onset of neck pain. The monthly distribution during which SAT occurred clustered mainly from summer to early autumn (P<0.001) (Figure 2). In all, unilateral or bilateral neck pain developed at the onset in 68% of the patients, 23% experienced nasal discharge, cough, and sputum within 1 month before the onset of SAT, and 28% had temperatures >38°C (100.4°F). The rate of bilateral ultrasound hypoechoic areas tended to increase over time, but the changes are not statistically significant (Figure 3). Typical symptoms of thyrotoxicosis, including palpitations, increased sweating, and weight loss, developed in 62% of the patients (Figure 3). Within 1 month after the onset of SAT, the serum TSH and ALT declined significantly (P<0.05), as compared with TSH and ALT levels measured within 7 days of onset, and were clearly different in the three time periods (Figure 4). The other laboratory tests did not change significantly. The rates of virus infection and other diseases did not differ from those in the general population. There were 9 patients (1.6%) in the cohort who had episodes of recurrent SAT with an interval of 13±5.6 years between the first and second episodes.

CONCLUSION Serum TSH levels are statistically lower within 30 days and remain so for over 60 days after the onset of SAT but other routine laboratory tests show little significant change.

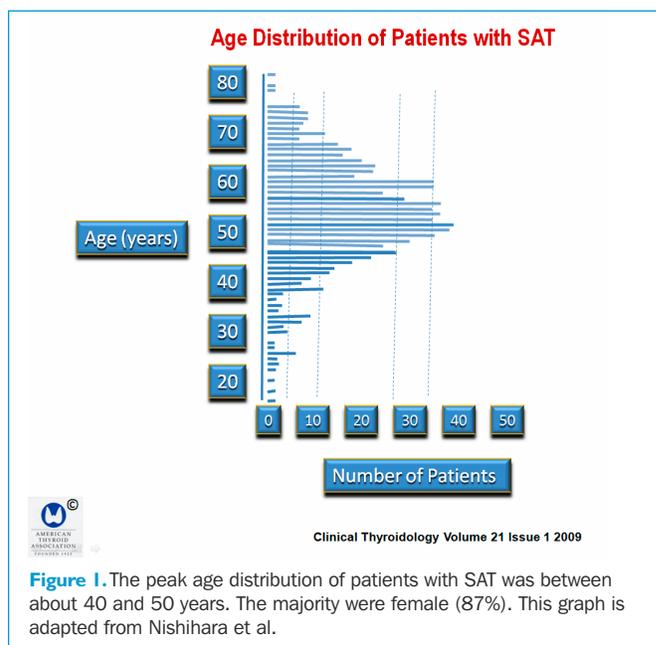


Figure 1. The peak age distribution of patients with SAT was between about 40 and 50 years. The majority were female (87%). This graph is adapted from Nishihara et al.

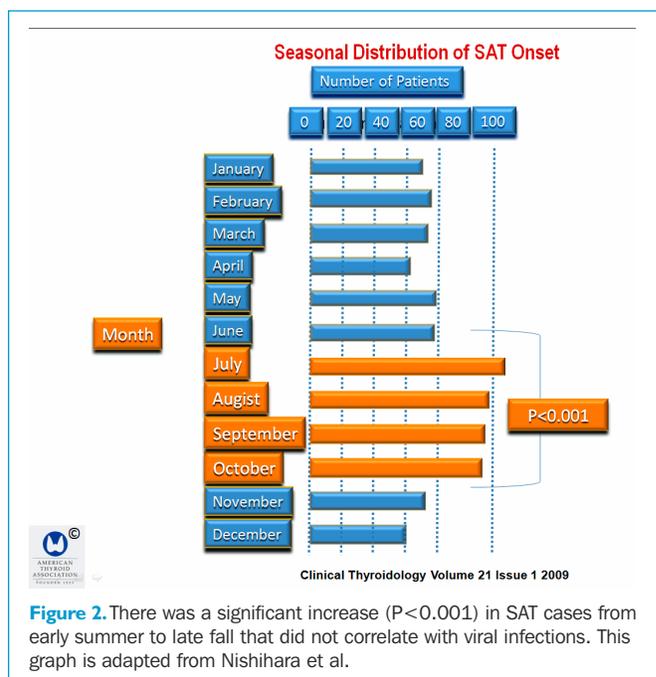


Figure 2. There was a significant increase (P<0.001) in SAT cases from early summer to late fall that did not correlate with viral infections. This graph is adapted from Nishihara et al.

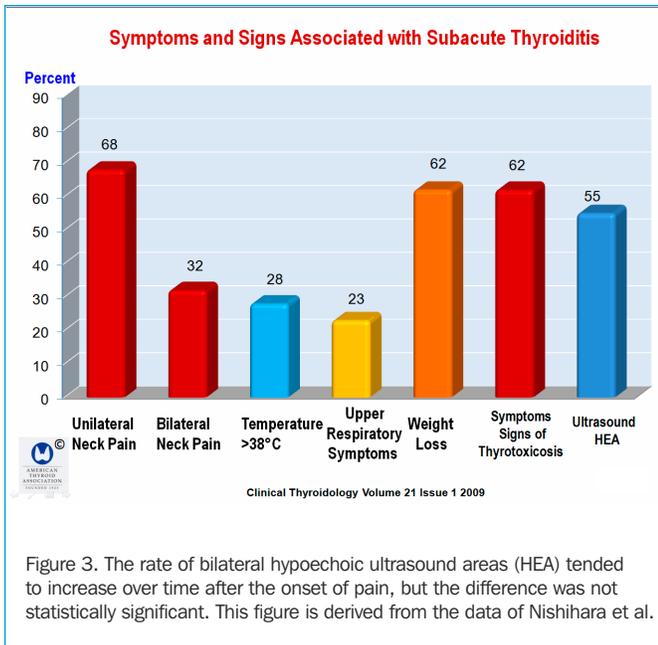


Figure 3. The rate of bilateral hypoechoic ultrasound areas (HEA) tended to increase over time after the onset of pain, but the difference was not statistically significant. This figure is derived from the data of Nishihara et al.

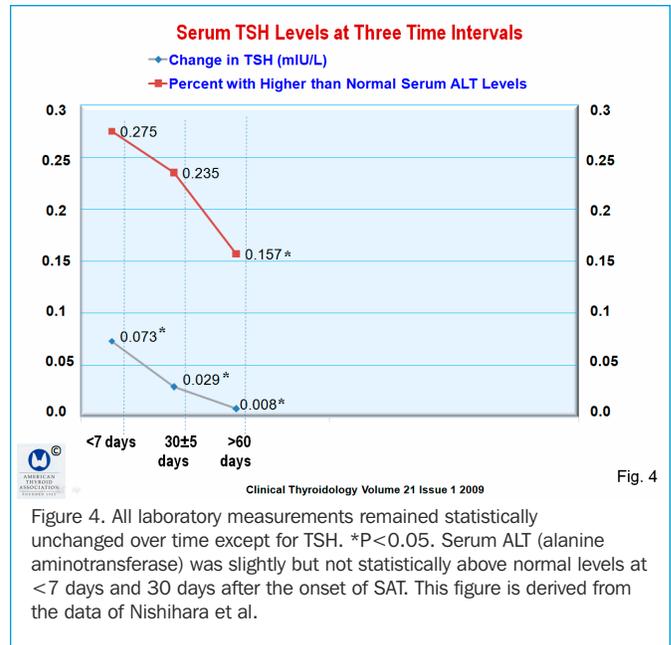


Fig. 4

Figure 4. All laboratory measurements remained statistically unchanged over time except for TSH. *P<0.05. Serum ALT (alanine aminotransferase) was slightly but not statistically above normal levels at <7 days and 30 days after the onset of SAT. This figure is derived from the data of Nishihara et al.

COMMENTARY

The principal finding in this study is that few abnormal laboratory tests occurred in the first 30 days following the initial manifestations of SAT, with the exception of serum TSH levels, which were significantly suppressed within a week after the patients sought medical attention and remained suppressed for more than 60 days. The study did not review the treatment of SAT, which is probably the most controversial issue concerning this disorder.

One review (1) of 160 patients with SAT found, as reported by Nishihara et al., that thyroid pain was the presenting symptom in 96% of the patients, and 4% had a relapse of SAT 6 to 21 years after the initial episode. Although corticosteroid therapy was given to 36% of the patients, early-onset hypothyroidism occurred both in patients receiving (29%) and in those not receiving (37%) the drug. Moreover, at the last follow-up, more patients who had hypothyroidism had received corticosteroid therapy as compared with the group that had not received corticosteroid therapy (25% vs. 10%) (P<0.05). Although the study found that corticosteroid therapy may relieve symptoms, it did not prevent the onset of both early and late hypothyroidism.

Another retrospective review (2) of 56 consecutive patients (70% of whom were female with a mean [±SD] age of 48.6±12 years) found that 9% had recurrent disease, although differences in occurrence by season were not significant (P = 0.28). Ten

patients received no treatment, and 43 others received either nonsteroidal antiinflammatory drugs (NSAIDs; 25 patients) or glucocorticoids (18 patients). However, the duration of hyperthyroidism was similar in patients given NSAIDs and glucocorticoids, and untreated patients had less severe clinical disease than those who were treated. The authors concluded that SAT follows an unpredictable clinical course that is hardly affected by its treatment.

A third retrospective review (3) of 176 patients with SAT found that thyroid pain was present in 97% of female patients and 100% of male patients, and 78 patients (46%) had high fever. Among patients who were treated with NSAIDs, recurrence developed in 10% and there was no significant difference in recurrence rates between patients who had been treated with NSAIDs and those who had been treated with prednisolone.

Thus, studies show that the presenting symptoms are reasonably predictable, as are the changes in thyroid-function tests reflecting early manifestations of hyperthyroidism that may persist for up to several months, and that treatment has little effect on outcome. The ultrasound changes described by Nishihara et al. are important and provide guidance as to what to expect on ultrasonography.

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References

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