Survey on the steroid dose for patients with subacute thyroiditis in a Korean tertiary hospital

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Introduction

SAT, also called subacute granulomatous or de Quervain thyroiditis, is an uncommon condition, yet is considered the most common cause of painful thyroiditis. Patients with SAT usually complain of pain in the thyroid region and symptoms of thyrotoxicosis induced by destruction of the thyroid. Since the level of inflammation varies in each patient, some patients show few symptoms, while others show severe neck pain. Usually. Oral glucocorticoids (prednisolone [PSL]) are administered in moderate or severe cases and provide dramatic relief from pain and fever. Although PSL with 40mg/d has been the preferred initial dosage for treatment for SAT, there have been reports with variable dose of PSL 15 to 60mg/d (Table 1). In this study, we retrospectively surveyed the association between steroid dosage and clinical outcomes in SAT.

Year	Reference	Initial dose of PSL	N	Period of medication	Recurrence rate
1970	Vagenakis et al. JCEM 31	30mg	5	52.6 days (mean)	
1993	Volpe et al. Thyroid 3	40mg	-	6 weeks	20%
1996	Yamada et al. JCEM 81	30mg	5	37 days	
1997	Bennedbaek et al. Thyroid 7	37.5mg	23	6-12 weeks	35%
1997	Topuzovic et al. J Nucl Med 38	40-60mg	49	6.4 months	
2001	Mizukoshi et al. Intern Med 40	25-30mg	36	5-6 weeks	22%
2003	Fatourechi et al. JCEM 88	40mg	34	34 days (mean)	
2013	Sumihisa, et al. Thyroid 23	15mg	219	7-8 weeks (mean)	

Table 1. Summary of previous reports about steroid treatment on SAT.

Methods

We examined 132 patients with SAT who visited our endocrinology clinic at least three times between january 2005 and December 2012. We excluded patients without high ESR level, steroid prescription, and follow-up within 6month after resolution. We also excluded 4 subjects diagnosed with acute supprative thyroiditis 또는 acute exacerbation of chronic thyroiditis. Final number of subjects was 63, all of whom showed pain and/or tenderness in the thyroid gland area. The outcome in the group with initial steroid dose less than 30 mg (n = 22, 34.9%) was compared with that with 30 mg or more (n = 41, 65.1%). Data are presented as number(%) or mean ± SD. Statistical analysis was done by using 19.0. P value was calculated by χ2 t-test or Fisher's exact test.

Results

The mean age of the total patients was 48.0 ± 10.4 yr. 97% of the patients was female. The incidence was most prevalent from September to November (40%, n = 26). (Figure 1).

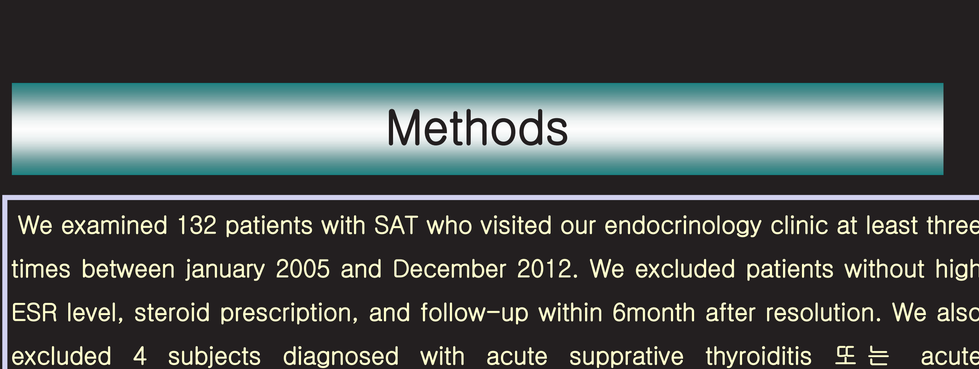

Figure 1. Seasonal distribution of SAT onset.

The mean of initial prednisolone dose was 30.2 ± 12.4 mg for 1.6 ± 0.9 wk (Figure 2A), while tapering steroid dosage.

Total mean duration of steroiid usage was 7.6 ± 5.5 wk (1wk at minimum ~ 36wk at maximum) (Figure 2B). Pain became subside after steroid treatment after 3.7 ± 3.4자 (0.6wk at minimum ~ 13wk at maximum). 7 patients (11.1%) have relapsed within six months.

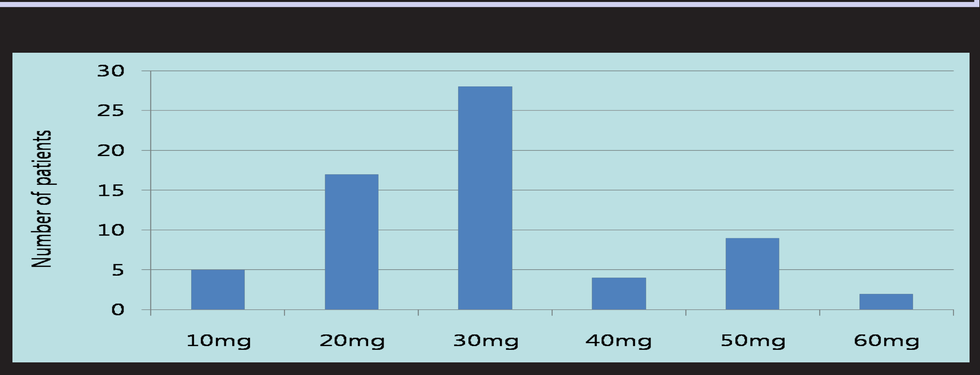

Figure 2A.Initial dose of prednisolone administration.

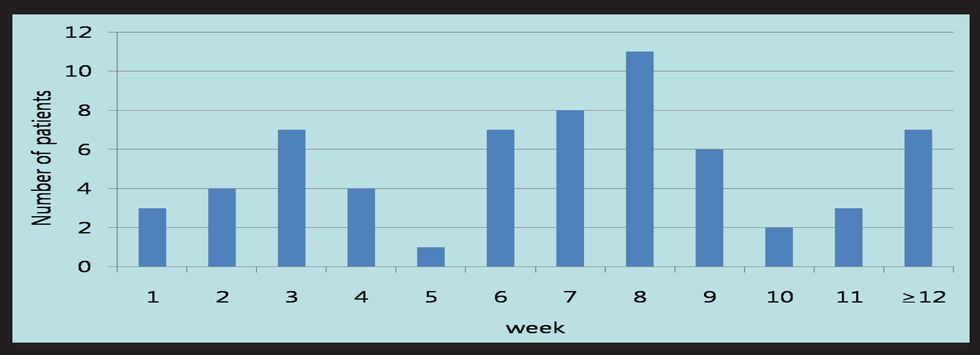

Figure 2B.Duration of prednisolone administration.

The clinical outcome in the group with less dosage was not significantly different from that in the group with more dosage, such as total administration period (P = 0.804), the recurrence rate (P = 0.423), TSH (P = 0.826), free T4 (P = 0.072), ESR (P = 0.079), 99m-Technisium thyroid scan uptake (P = 0.185). Although no serious side effect was observed, two cases of epigastric discomfort or swelling was reported in each group.

	Initial dose ≤ 20mg	Initial dose ≥ 30mg	P value
Subjects, N(%)	22(34.9)	41(65.1)	
Age (yr)	46.0 ± 10.8	49.1 ± 10.1	0.269
Total duration of steroid coverage (wk)	7.3 ± 5.5	7.7 ± 5.6	0.804
TSH (IU/ml)	0.30 ± 0.59	0.35 ± 1.03	0.826
Free T4 (ng/dl)	2.09 ± 0.95	2.62 ± 1.16	0.072
ESR	64.0 ± 31.5	77.1 ± 23.3	0.068
Thyroid scan uptake (%)	0.70 ± 0.69	1.02 ± 0.99	0.185
Recurrence, N(%)	3 (13.6)	4 (9.8)	0.687

Table 1.Comparison of Initial Data in Patients with SAT Classified According to the initial dose of prednisolone. Data are presented by Number(percentage) or mean ± S.D. p values are calculated by t-test or Fisher's exact test

Conclusion

In our study, the initial dosage for the treatment of SAT with less than 30mg appeared as effective as 30mg or more. Relapse of SAT seemed not dependent on the initial dose of prednisolone. Further prospective study on SAT about the effective initial steroid dosage with less side effects might be needed.

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