

ORIGINAL ARTICLE

Low dose prednisolone in treatment of acute thyroiditis

¹Karan Singh Yadav, ²Lalit Kumar

¹Assistant Professor, Department of ENT, Saraswathi Institute of Medical Sciences, Hapur, Uttar Pradesh, India;

²Assistant Professor, Department of Anaesthesia, Muzaffarnagar Medical College, Muzaffarnagar, Uttar Pradesh, India

ABSTRACT:

Background: Thyroid gland inflammation is the hallmark of a disorder called thyroiditis. Thyroiditis can be classified as either painful or painless. Among the painful types of thyroiditis, subacute thyroiditis, also called de Quervain's thyroiditis, is the most common cause of acute painful thyroiditis. The present study was conducted to assess the role of low dose prednisolone in treatment of acute painful thyroiditis. **Materials & Methods:** 57 patients with thyroiditis of both genders was selected. Prednisolone was started at a dose of 20 mg per day (10 mg twice daily) and decreased over a period of four weeks for the participants. For two weeks, the dosage was 10 mg twice a day, and for the following two weeks, it was 10 mg once a day. Pain, tenderness, and ESR severity were recorded at baseline and again after 4 weeks. **Results:** Out of 57 patients, 37 were males and 20 were females. Age group 20-30 years had 6, 30-40 years had 34 and 40-50 years had 17 patients. The mean pain on VAS at baseline was 7.8 and at 4 weeks was 1.6. The mean ESR rate at baseline was 52.4 mm/hour and at 4 weeks was 23.6 mm/hour. The difference was significant ($P < 0.05$). **Conclusion:** 20 mg of prednisolone daily tapered over 4 weeks is a suitable treatment for subacute thyroiditis. The dosage can be drastically lowered after two weeks.

Keywords: thyroiditis, inflammation, prednisolone

Corresponding author: Lalit Kumar, Assistant Professor, Department of Anaesthesia, Muzaffarnagar Medical College, Muzaffarnagar, Uttar Pradesh, India

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INTRODUCTION

Thyroid gland inflammation is the hallmark of a disorder called thyroiditis. Thyroiditis can be classified as either painful or painless. Among the painful types of thyroiditis, subacute thyroiditis, also called de Quervain's thyroiditis, is the most common cause of acute painful thyroiditis.¹ When patients see otorhinologists, they usually complain of neck pain, edema, and odynophagia. Discomfort is found when the area surrounding the thyroid gland is examined.² It is thought to be a viral inflammatory disease, while the exact cause is unknown. The disorder usually has a triphasic course of hyperthyroidism, hypothyroidism, and euthyroidism and resolves on its own over a period of many months.³

Subacute thyroiditis has long been treated with corticosteroids or nonsteroidal anti-inflammatory drugs (NSAIDs).⁴ Steroids are known to have more negative side effects than NSAIDs, despite the fact that the reaction to steroids is often quicker and more extreme than that to NSAIDs.⁵ Since subacute thyroiditis resolves on its own, some people might not benefit from high dosages of steroids. The usual starting dose of prednisolone is 1 mg/kg per day, tapered over a 6-week period; however, the logic

behind this dosage has not yet been validated by prospective trials.^{6,7} The present study was conducted to assess the role of low dose prednisolone in treatment of acute painful thyroiditis.

MATERIALS & METHODS

The present study was conducted on 57 patients with thyroiditis of both genders. All were informed regarding the study and their written consent was obtained.

Data such as name, age, gender etc. was recorded. The diagnosis was made based on the patient's history of anterior neck pain, tenderness in the thyroid region, a painful and enlarged thyroid gland, and a neck ultrasound that revealed elevated erythrocyte sedimentation rate (ESR) and enhanced thyroid gland vascularity. Prednisolone was started at a dose of 20 mg per day (10 mg twice daily) and decreased over a period of four weeks for the participants. For two weeks, the dosage was 10 mg twice a day, and for the following two weeks, it was 10 mg once a day. Pain, tenderness, and ESR severity were recorded at baseline and again after 4 weeks. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Gender wise distribution of patients

Total- 57		
Gender	Male	Females
Number	37	20

Table I shows that out of 57 patients, 37 were males and 20 were females.

Table II Age wise distribution of patients

Age group (years)	Number	P value
20-30	6	0.05
30-40	34	
40-50	17	

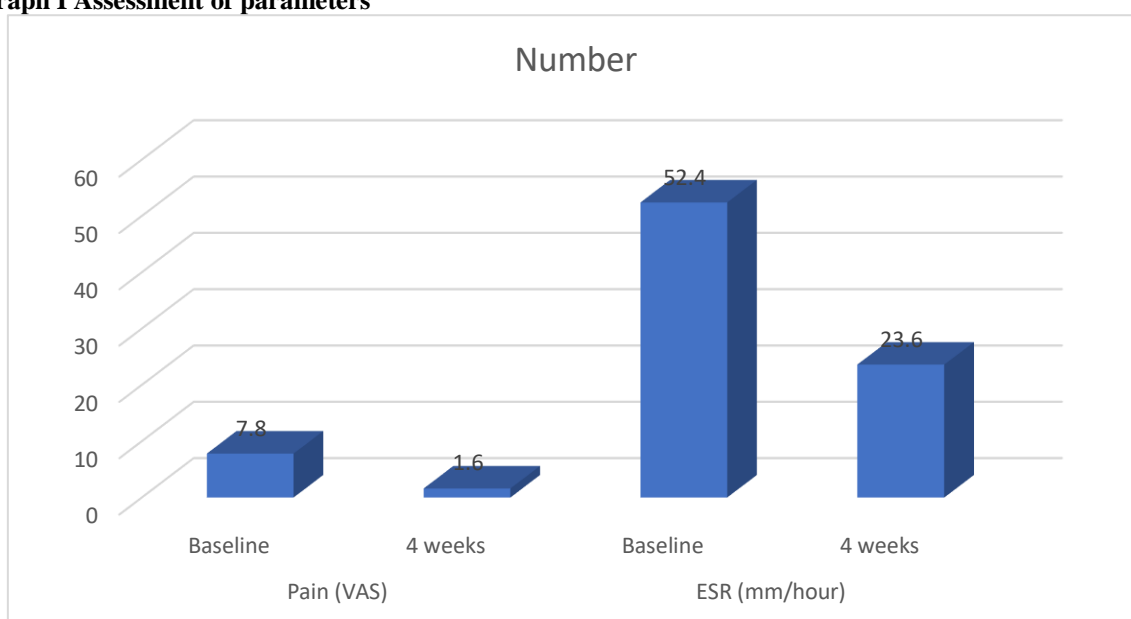
Table II shows that age group 20-30 years had 6, 30-40 years had 34 and 40-50 years had 17 patients.

Table III Assessment of parameters

Parameters	Variables	Number	P value
Pain (VAS)	Baseline	7.8	0.01
	4 weeks	1.6	
ESR (mm/hour)	Baseline	52.4	0.02
	4 weeks	23.6	

Table III, graph I shows that mean pain on VAS at baseline was 7.8 and at 4 weeks was 1.6. The mean ESR rate at baseline was 52.4 mm/hour and at 4 weeks was 23.6 mm/hour. The difference was significant ($P < 0.05$).

Graph I Assessment of parameters



DISCUSSION

The self-limited, potentially viral, inflammatory thyroid condition known as subacute thyroiditis (SAT), also known as de Quervain thyroiditis or granulomatous thyroiditis, is typically accompanied by systemic symptoms and thyroid pain.⁸ TSH suppression, decreased thyroid uptake of radioactive iodine, high erythrocyte sedimentation rate, and thyroid discomfort with hyperthyroidism symptoms are among the well-known clinical hallmarks of SAT. Laboratory and clinical data are used to make the diagnosis.⁹ Rarely is tissue diagnosis required. There are few community and incidence cohort studies, despite the fact that numerous non-population-based research have characterized the clinical features and outcome.¹⁰ The present study was conducted to assess the role of low dose prednisolone in treatment of acute painful thyroiditis.

We found that out of 57 patients, 37 were males and 20 were females. Fatourehchi V et al¹¹ studied the 160 patients with SAT. The overall age- and sex-adjusted incidence from 1960 through 1997 was 4.9 cases per

100,000/yr. In the most recent 28-yr period (1970-1997), 94 patients were identified. In this group, pain was the presenting symptom in 96%. SAT recurred in 4% of the patients 6-21 yr after the initial episode. Corticosteroid therapy was given to 36%. Early-onset hypothyroidism occurred both in patients receiving corticosteroid therapy (29%) and in those not receiving corticosteroid therapy (37%). At latest follow-up, significantly more patients who had received corticosteroid therapy had a diagnosis of hypothyroidism than the group without corticosteroid therapy (25% vs. 10%, $P < 0.05$; overall rate of hypothyroidism, 15%). Early transient hypothyroidism is common in SAT. Permanent hypothyroidism is less common, and only 15% of the patients are receiving T(4) therapy after 28 yr of follow-up. Symptomatic relief is achieved with corticosteroid therapy, but such therapy does not prevent early- and late-onset thyroid dysfunction.

We found that age group 20-30 years had 6, 30-40 years had 34 and 40-50 years had 17 patients. Nishihara E et al¹² conducted a study in which female

patients between the ages of 40 and 50 were more likely to acquire SAT, with notable seasonal clusters occurring from summer to early autumn. 1.6% of all cases were recurring episodes of SAT at intervals of 13.6+/-5.6 years, although the rates of any virus infections and illnesses were the same as those in the general population. More than 60% of patients experienced the classic symptoms of thyrotoxicosis, and 28.2% of patients had temperatures higher than 38 degrees Celsius at the start of SAT. Before treatment, most of the abnormal laboratory findings associated with thyrotoxicosis, inflammation, and liver dysfunction reached peak levels within 1 week after onset. Ultrasound examination showed that half of the patients with unilateral thyroid pain presented with bilateral hypoechoic area in the thyroid and the rate of bilateral hypoechoic area tended to increase 2 months after onset.

We found that mean pain on VAS at baseline was 7.8 and at 4 weeks was 1.6. The mean ESR rate at baseline was 52.4 mm/hour and at 4 weeks was 23.6 mm/hour. Unnikrishnan AG et al¹³ conducted a cross-sectional, multi-centre, epidemiological study in eight major cities (Bangalore, Chennai, Delhi, Goa, Mumbai, Hyderabad, Ahmedabad and Kolkata) of India to study the prevalence of hypothyroidism among adult population. Thyroid abnormalities were diagnosed on the basis of laboratory results (serum FT3, FT4 and Thyroid Stimulating Hormone [TSH]). Patients with history of hypothyroidism and receiving levothyroxine therapy or those with serum free T4 <0.89 ng/dl and TSH >5.50 µU/ml, were categorized as hypothyroid. The prevalence of self reported and undetected hypothyroidism, and anti-thyroid peroxidase (anti-TPO) antibody positivity was assessed. A total of 5376 adult male or non-pregnant female participants ≥18 years of age were enrolled, of which 5360 (mean age: 46 ± 14.68 years; 53.70% females) were evaluated. The overall prevalence of hypothyroidism was 10.95% (n = 587, 95% CI, 10.11-11.78) of which 7.48% (n = 401) patients self-reported the condition, whereas 3.47% (n = 186) were previously undetected. Inland cities showed a higher prevalence of hypothyroidism as compared to coastal cities. A significantly higher ($P < 0.05$) proportion of females vs. males (15.86% vs 5.02%) and older vs. younger (13.11% vs 7.53%), adults were diagnosed with hypothyroidism. Additionally, 8.02% (n = 430) patients were diagnosed to have subclinical hypothyroidism (normal serum free T4 and TSH >5.50 µIU/ml). Anti – TPO antibodies suggesting autoimmunity were detected in 21.85% (n = 1171) patients.

The shortcoming of the study is small sample size.

CONCLUSION

Authors found that 20 mg of prednisolone daily tapered over 4 weeks is a suitable treatment for subacute thyroiditis. The dosage can be drastically lowered after two weeks.

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