

SOUTHWEST JOURNAL of PULMONARY & CRITICAL CARE

Journal of the Arizona, New Mexico, Colorado and California Thoracic Societies www.swjpc.com

Adjunctive Effects of Oral Steroids Along with Anti-Tuberculosis Drugs in the Management of Cervical Lymph Node Tuberculosis

Babulal Bansiwali¹
Maneesha Jelia²
Ramesh Chand Meena¹
Satyam Agarwal¹
Shinu A¹

Departments of ¹Respiratory Medicine and ²Anatomy
Government Medical College, Kota
Rajasthan 324010, India

Abstract

Background: Tuberculosis (TB) can infect both pulmonary and extra-pulmonary organs. In India pulmonary TB accounts for 80% of cases and extrapulmonary TB (EPTB) accounts for 20% cases. Cervical lymph nodes are the most location for EPTB.

Aims and Objectives: To study the efficacy of treatment with oral steroids along with anti-tuberculosis treatment in cervical lymph node tuberculosis.

Methods: A total of 60 patients were enrolled in the study all with EPTB and cervical lymphadenitis. These 60 study patients were randomised into two groups. Group-I consisted of 30 patients given anti-tuberculosis therapy along with prednisolone 1mg/kg body weight for 4 weeks followed by tapering at 0.5 mg/kg body weight over 4 weeks. Group-II was comprised of 30 patients given antituberculosis treatment plus placebo

Results: After completion of treatment 27 patients in Group I (90%) showed complete resolution and 3 patients (10%) had residual evidence of lymphadenitis with no change. In contrast, only 19 patients (63.3%) showed complete resolution in Group 2 and 11 patients (36.7%) had residual lymphadenitis present (10 had no change, 1 had increase in size).

Conclusion: We conclude that steroids given with antituberculosis treatment to patients with cervical lymphadenitis led to faster and earlier resolution of tuberculous lymphadenitis.

Keywords: corticosteroids, steroids, tuberculosis, extrapulmonary tuberculosis, treatment, lymphadenitis, scrofula, symptoms, antituberculosis treatment, prednisolone,

Introduction

Tuberculosis (TB) is an ancient disease that affects both pulmonary and extra-pulmonary organs. In India most TB cases are pulmonary (80%) but extrapulmonary TB (EPTB) accounts for a substantial proportion (20%) (1). Peripheral lymph node tuberculosis is observed in about 5% of all TB patients and 30-55% of extra-pulmonary TB cases (2). Cervical lymph nodes are the most common lymph nodes affected, classically termed as “scrofula”, although supraclavicular, axillary, inguinal nodes may also be involved (3-5). Lymphadenopathy may lead to complications by compression of adjacent structures, organs, and blood vessels or fistula formation (6-10). Multiple studies have shown better outcomes with addition of steroids to anti-tuberculosis treatment in extrapulmonary tuberculosis including pleural effusion, pericardial effusion, tubercular meningitis, and mediastinal lymphadenopathy (11,12). However, the safety and efficacy of this approach remains largely unproven except in cases of intrathoracic obstruction where it was found to relieve the pressure on the compressed bronchus (13).

Aims and Objectives

To study the efficacy of treatment with oral steroids along with anti-tuberculosis treatment in cervical lymph node tuberculosis.

Materials and Methods

Patients: Sixty patients with cervical lymph node tuberculosis seen from 1st October 2013 to 30th September 2014 in the Department of Respiratory Medicine, Government Medical College, Kota, India participated in the study. All cases of cervical lymph node tuberculosis found to have cytopathological, histo-pathological, immunological and/or bacteriological

evidence of TB and who had not received any anti-tuberculosis therapy in the past, were included in the study. Patients were excluded if they were pregnant or had a chronic disease such as diabetes mellitus, hypertension, peptic ulcer disease, alcoholism, or HIV-AIDS. Patients were also excluded if they had a detectable abscess.

Study Design: The study was an open label, randomized, prospective and placebo-controlled interventional study comparing the efficacy of the addition of two months treatment with oral corticosteroids along with Revised National Tuberculosis Control Programme (RNTCP) recommended anti-TB therapy.

Sixty patients were randomised into two groups by a computer-generated random table. All patients were given category I anti-tuberculosis therapy (ATT) consisting of INH 600 mg and rifampicin 450 mg daily for 6 months with pyrazinamide 1500 mg daily for the first 2 months. Group-I consisted of 30 patients given category I RNTCP-recommended therapy along with prednisolone 1mg/kg body weight for 4 weeks followed by tapering at 0.5mg/kg body weight for 4 weeks. Group-II was comprised of 30 patients given category I RNTCP-recommended therapy plus placebo.

All the study cases were monitored clinically by visits after 1, 2 and 6 months.

Statistical Analysis: Pearson's χ^2 test or Fisher's exact test was used to evaluate correlations between categorical variables, as appropriate. Relationships among continuous variables was evaluated using Student's t-test. All tests of significance are two-tailed, and $p < 0.05$ was considered to reflect significance.

Results

The patients were well matched between groups in age (27.5 ± 12.9 years vs. 26.3 ± 11.7 years, $p=0.612$) and sex (12M/18F vs. 11M/19F). The groups were well-matched in other clinical characteristics (Table 1).

Table 1. Clinical characteristics of patients at beginning of therapy.

Symptom/ Physical Finding	Group-I Number (Per Cent)	Group-II Number (Per Cent)	P Value
Fever	13 (43)	14 (47)	0.795
Loss of weight	9 (30)	7 (23)	0.559
Loss of appetite	10 (33)	9 (30)	0.781
Fatigue	14 (47)	8 (27)	0.108
Pain and local tenderness	12 (40)	9 (30)	0.417
Lymph node involvement-solitary	14 (47)	17 (57)	0.438
Lymph node involvement-two	7 (23)	5 (1)	0.519
Lymph node involvement-three or more	9 (30)	8 (27)	0.774

In addition to the above, the patients were well-matched by the extent of both upper and lower lymphadenopathy (Group I, 25/30; Group 2, 28/30), absence of chest lesions (Group I, 1/30; Group 2, 2/30), and positive histopathology on needle aspiration (Group I, 27/30; Group 2, 26/30). Out of 26 patients of Group II, 4 (13.3%) patients were diagnosed by AFB smear of the needle aspirate as well as cytopathological examination, 2(6.7%) had only AFB smear positivity and 22 (86.7%) had only cytopathological confirmation. None had a positive sputum smear.

Most of the patients in Group-I had earlier lymph node resolution compared to Group-II (Table 2).

Table 2. Initial lymph node status and after varying durations of treatment

Status	Group-I Number (Per Cent)			Group-II Number (Per Cent)		
	After 1 month	After 2 months	After 6 months	After 1 month	After 2 months	After 6 months
Resolved	0 (0)	6 (20)	27 (85)	0 (0)	4 (13)	19 (64)
Decreased	25 (80)	21 (70)	0 (0)	18 (27)	15 (50)	0 (0)
Increased	0 (0)	0 (0)	0 (0)	0 (0)	1 (3)	1 (3)
No change	5 (17)	3 (10)	3 (10)	12 (40)	10 (33)	10 (33)

This table shows the status of the lymph node initially and after varying duration of treatment. After completion of treatment 27 patients (90%) showed complete resolution and only 3 patients (10%) had no change in Group-I. In contrast, only 19 patients (63.3%) in Group-II showed complete resolution and 11 patients (36.7%) had residual lymph nodes (10 with no change, 1 with an increase in size). Most patients had a negative AFB smear from the needle aspirate after 6 months in both Group-1 (27 patients) and group-II (26 patients).

Only 2 patients in Group-I (6.67%) had complications as compared to 09 (30.0%) in Group-II ($p<0.001$). The complications were in the form of abscess, sinus and/or new lymph node/s. All these patients needed surgical exploration during the course of treatment. Sequelae in form of residual lymph node was also higher in Group II patients (10 out of 30 patients) as compared to Group I (3 out of 30, $p<0.001$).

Overall, the incidence of side effects was greater in Group-II. This difference was mostly due to a higher occurrence of joint pain and skin rashes in Group-II than Group-I, (8 and 4 patients vs. 1 and 1 patients respectively).

Discussion

The present study was done to determine the role of steroids in the management of cervical lymph node tuberculosis. In contrast to 20 patients (66.67%) in the non-steroid group-II who had complete resolution after 6 months, 27 patients (90%) in the steroid group had complete resolution. Blaikely *et al.* (14) reported complete resolution in 82% of their steroid study patients which was similar to results of our study.

In the present clinical study, only 2 patients (6.66%) in the steroid group had

complications as compared to 9 (30.0%) in the non-steroid group. The complications were in the form of abscess, sinus and/or new lymph node/s. In Group II, fresh lymph nodes appeared in 4, existing lymph node increased in 1, abscess formation occurred in 3 while 2 patients developed sinuses. Sequela in the form of residual lymph node was also higher in the non-steroid patients (10 out of 30, 33.33%) as compared to the steroid treated patients (3 out of 30 patients, 5%, $p < 0.001$). Results were comparable to other studies (15).

We used a moderate dose of steroids for 2 months. The major concern against the use of steroids when given along with anti-TB treatment in tubercular lymphadenitis are adverse systemic effects. However, the overall incidence of side effects with anti-TB treatment were more in the non-steroid group in the form of joint pains and skin rashes, (8 and 4 patients v/s 1 and 1 patients respectively). Gastro-intestinal side effects i.e. nausea/vomiting and pain abdomen, were slightly higher in the steroid-treated patients.

Conclusion

We conclude that steroids when given along with anti-tubercular treatment led to faster and earlier resolution of tuberculous lymphadenitis. Complication and sequela in form of residual lymph node are also less in steroid group as compared to non-steroid group. It is unclear if long-term outcomes are affected. However, this data suggests that justification for routine use of corticosteroids could be made in tubercular cervical lymphadenitis.

References

1. Arora V, Jaiswal AK, Gupta S, Gupta MB, Jain V, Ghanchi F. Implementation of RNTCP in a private medical college:

- five years' experience. *Indian J Tuberc.* 2012 Jul;59(3):145-50. [[PubMed](#)].
2. Asghar RJ, Pratt RH, Kammerer JS, Navin TR. Tuberculosis in South Asians living in the United States, 1993-2004. *Arch Intern Med.* 2008 May 12;168(9):936-42. [[CrossRef](#)] [[PubMed](#)]
3. Lazarus AA, Thilagar B. Tuberculous lymphadenitis. *Dis Mon.* 2007 Jan;53(1):10-5. [[CrossRef](#)] [[PubMed](#)] Thompson MM, Underwood MJ, Sayers RD, Dookeran KA, Bell PR. Peripheral tuberculous lymphadenopathy: a review of 67 cases. *Br J Surg.* 1992 Aug;79(8):763-4. [[CrossRef](#)] [[PubMed](#)]
4. Dandapat MC, Mishra BM, Dash SP, Kar PK. Peripheral lymph node tuberculosis: a review of 80 cases. *Br J Surg.* 1990 Aug;77(8):911-2. [[CrossRef](#)] [[PubMed](#)]
5. Singh B, Moodley M, Goga AD, Haffejee AA. Dysphagia secondary to tuberculous lymphadenitis. *S Afr J Surg.* 1996 Nov;34(4):197-9. [[PubMed](#)]
6. Gupta SP, Arora A, Bhargava DK. An unusual presentation of oesophageal tuberculosis. *Tuber Lung Dis.* 1992 Jun;73(3):174-6. [[CrossRef](#)] [[PubMed](#)]
7. Ohtake M, Saito H, Okuno M, Yamamoto S, Ohgimi T. Esophagomediastinal fistula as a complication of tuberculous mediastinal lymphadenitis. *Intern Med.* 1996 Dec;35(12):984-6. [[CrossRef](#)] [[PubMed](#)]
8. Wilson RS, White RJ. Lymph node tuberculosis presenting as chyluria. *Thorax.* 1976 Oct;31(5):617-20. [[CrossRef](#)] [[PubMed](#)]
9. Puri S, Khurana SB, Malhotra S. Tuberculous abdominal lymphadenopathy causing reversible renovascular hypertension. *J Assoc Physicians India.* 2000 May;48(5):530-2. [[PubMed](#)]
10. Mansour AA, Al-Rbeay TB. Adjunct therapy with corticosteroids or

- paracentesis for treatment of tuberculous pleural effusion. *East Mediterr Health J.* 2006 Sep;12(5):504-8. [\[PubMed\]](#)
11. Reuter H, Burgess LJ, Louw VJ, Doubell AF. The management of tuberculous pericardial effusion: experience in 233 consecutive patients. *Cardiovasc J S Afr.* 2007 Jan-Feb;18(1):20-5. [\[PubMed\]](#)
 12. Nemir RL, Cardona J, Vaziri F, Toledo R. Prednisone as an adjunct in the chemotherapy of lymph node-bronchial tuberculosis in childhood: a double-blind study. II. Further term observation. *Am Rev Respir Dis.* 1967 Mar;95(3):402-10. [\[CrossRef\]](#) [\[PubMed\]](#)
 13. Jha BC, Dass A, Nagarkar NM, Gupta R, Singhal S. Cervical tuberculous lymphadenopathy: changing clinical pattern and concepts in management. *Postgrad Med J.* 2001 Mar;77(905):185-7. [\[CrossRef\]](#) [\[PubMed\]](#)
 14. Blaikley JF, Khalid S, Ormerod LP. Management of peripheral lymph node tuberculosis in routine practice: an unselected 10-year cohort. *Int J Tuberc Lung Dis.* 2011 Mar;15(3):375-8. [\[PubMed\]](#)
 15. Allen MB, Cooke NJ. Corticosteroids and tuberculosis. *BMJ.* 1991 Oct 12;303(6807):871-2. [\[CrossRef\]](#) [\[PubMed\]](#)