

# Therapeutic Effect of Oral Administration and External Therapy of Traditional Chinese Medicine on Cervical Tuberculous Lymphadenopathy

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**Abstract: Objective:** To analyze the clinical effect and value of oral administration and external therapy of traditional Chinese medicine for treatment of cervical tuberculous lymphadenopathy. **Methods:** A total of 56 patients with cervical tuberculous lymphadenopathy admitted to our hospital from January 1 to January 2018 were recruited. By using double-blind method, the patients were divided into control group (n=28) and experimental group (n=28). Control group comprised of patients with conventional anti-tuberculosis treatment, while the experimental group comprised of patients treated with oral administration and external therapy of traditional Chinese medicine. Total effective rate, incidence of complication and level of T lymphocyte subsets were compared between the two groups of cervical tuberculous lymphadenopathy patients. **Results:** Post-treatment data of total effective rate, complication rate, CD3+, CD4+, CD8+, CD4+/CD8+ of the experimental group were compared with the control group.  $P<0.05$ ; statistical analysis showed statistical significance. Post-treatment data of CD3+, CD4+, CD8+, CD4+/CD8+ of both control and experimental groups were compared with pre-treatment data.  $P<0.05$ ; statistical analysis showed statistical significance. **Conclusion:** Oral administration and external therapy of traditional Chinese medicine possesses significant effect in treatment of cervical tuberculous lymphadenopathy.

**Keywords:** Oral administration and external therapy of traditional Chinese medicine; cervical tuberculous lymphadenopathy; clinical effect

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## 1 Introduction

Lymph node tuberculosis is a disease due to infection of *Mycobacterium tuberculosis* via lymphatic vessel or blood. It is a common extrapulmonary tuberculosis clinical disease, accounting for 81% of incidence of extrapulmonary tuberculosis. Common sites of lymph node tuberculosis are at neck, groin, underarm<sup>[1]</sup>. This study reported the clinical value of oral administration and external therapy of traditional Chinese medicine and conventional anti-tuberculosis treatment for 56 patients with cervical tuberculous lymphadenopathy admitted between January 2017 and January 2018.

## 2 Materials and methods

### 2.1 Basic information

By double-blind method, a total of 56 patients with cervical tuberculous lymphadenopathy admitted between January 2017 and January 2018 were equally divided into two groups, with 28 patients in each group. In control group, 14 were females and 14 were males, age was controlled within the range of 10 to 70 years old, median age was (40.54±4.22) years old. In experimental group, 15 were females and 13 were males, age was controlled within the range of 12 to 71 years old, median age was (41.29±5.11) years old. Basic data of the two groups was validated by statistical software,  $P<0.05$ , statistics showed no significance. Inclusion criteria: In accordance with diagnostic and treatment standard of traditional Chinese medicine and judgment standard of Western medicine. Patients and

their families indicated that they agreed to participate in this study. This study obtained ethics approval from ethics committee of the hospital.

Exclusion criteria: patients with mental disorder, uncooperative patients, and patients who did not meet treatment standard.

## 2.2 Methods

Patients in the control group were given conventional anti-tuberculosis treatment. Patients were given isoniazid, pyrazinamide, rifampicin, streptomycin and other related treatments. One chemotherapy session was given at 3 months, followed by second course of treatment in the next three months; isoniazid, pyrazinamide and rifampicin were used.

Patients in the experimental group were treated with oral administration and external therapy of traditional Chinese medicine. Prescriptions included 10g of each of Fritillaria, Khumbu, Sanling, Eshu, Yinhu, seaweed, and Bracts; 15g of each of *Prunella vulgaris*, Scrophularia, and Forsythia; 20g of each of cat claw grass and oyster; and 6g of white mustard. Decoction as 1 dose, twice daily (one in the morning and another in the evening); one treatment course for 3 months. After 2 treatment courses, traditional Chinese medicine wolf venom cataplasm was applied to enlarged lymph nodes, dressing was changed at the interval of 2d, one treatment course for 6 months.

## 2.3 Observation of indicator

Total effective rate, incidence of complication and level of T lymphocyte subsets in cervical tuberculous lymphadenopathy patients of experimental group and control group were observed, calculated and analyzed.

(1)Patients with significantly alleviated clinical

symptoms and reduction degree of swollen lymph node >2/3 was considered to be markedly effective. Patients with alleviated clinical symptoms and reduction degree of swollen lymph node between 1/2 and 2/3 were considered to be effective. Patients with no change in clinical symptoms and reduction degree of lymph node were considered to be ineffective.

(2)A volume of 2ml of fasting peripheral venous blood samples were obtained from subjects in the morning for detection of CD3+, CD4+, CD8+, CD4+/CD8+.

## 2.4 Statistical method

Data of all 56 cervical tuberculous lymphadenopathy patients participated in this study was analyzed using SPSS17.0 statistical software. Incidence of complication and total effective rate of patients with cervical tuberculous lymphadenopathy were analyzed and compared between experimental group and control group; they were expressed in the form of rate(%) and tested using  $X^2$  test. Level of T lymphocyte subsets of patients with cervical tuberculous lymphadenopathy in experimental group and control group were expressed in the form of (mean±standard deviation), t test was applied. Statistical test with  $P<0.05$  showed significant difference and statistical significance between the data indicators.

## 3 Results

### 3.1 Analysis of incidence of complication of cervical tuberculous lymphadenopathy patients in experimental and control groups

Incidence of complication in experimental group was 10.71%, which was lower than in control group (35.71%).  $P<0.05$ , statistical analysis showed statistical significance.

**Table 1 Comparison of incidence of complication between experimental group and control group of cervical tuberculous lymphadenopathy patients**

Group	Cases	Rash	Leukopenia	Gastrointestinal reaction	Liver damage	Incidence of Complication
Experimental	28	1	1	1	0	10.71%
Control	28	2	3	4	1	35.71%
$X^2$						4.9088
P						0.027

### 3.2 Analysis of total effective rate of clinical treatment for experimental and control groups of cervical tuberculous lymphadenopathy patients

Total effective rate of clinical treatment of cervical tuberculous lymphadenopathy patients in the experimental group(92.85%) was higher than that in the control group(71.42%).  $P<0.05$ , statistical analysis

showed statistical significance.

### 3.3 Analysis of T lymphocyte subsets level in

**Table 2 Comparison of total effective rate of clinical treatment for cervical tuberculous lymphadenopathy patients in experimental and control groups**

Group	Case	Markedly effective	Effective	Ineffective	Total effective rate
Experimental	28	16	10	2	92.85%
Control	28	8	12	8	71.42%
X <sup>2</sup>					4.3826
P					0.0363

#### cervical tuberculous lymphadenopathy patients of experimental and control groups

Pre-treatment data of CD3+, CD4+, CD8+, CD4+/CD8+ of cervical tuberculous lymphadenopathy patients in experimental group were compared with control group. P>0.05, there was no statistical significance between the data indicators. Post-treatment data of CD3+, CD4+, CD8+, CD4+/CD8+ of cervical

tuberculous lymphadenopathy patients in control group were compared with experimental group; P<0.05, statistical analysis showed statistical significance between the data indicators. For both control and experimental groups, post-treatment data of CD3+, CD4+, CD8+, CD4+/CD8+ of cervical tuberculous lymphadenopathy patients were compared with pre-treatment data; P<0.05, statistical analysis showed statistical significance between the data indicators.

**Table 3 Comparison of T lymphocyte subsets level between experimental group and control group of cervical tuberculous lymphadenopathy patients**

Group	Case	CD3+ (%)	CD8+ (%)	CD4+ (%)	CD4+/CD8+ (%)
Experimental	28				
Pre-treatment		60.55±3.54	20.22±3.04	24.21±2.11	1.25±0.23
Post-treatment		68.21±1.01ab	27.21±0.21ab	37.21±0.21ab	1.68±0.11ab
Control	28				
Pre-treatment		60.54±4.01	20.00±3.67	24.33±2.29	1.27±0.33
Post-treatment		62.22±0.22a	25.02±0.27a	29.21±0.25a	1.44±0.21a

Note: P<0.05, a indicates comparison with pre-treatment, b indicates comparison with control group

## 4 Discussions

Traditional Chinese medicine research pointed out that cervical tuberculous lymphadenopathy belongs to medical field of scrofula. It is caused by exogenous tuberculous pathogen, hepatic failure, emotional injury, impaired spleen function, and accumulation of dampness and phlegm formation<sup>[2]</sup>, which will eventually give rise to deficiency of qi and blood, and lead to scrofula formation. TCM syndrome differentiation shows that most cervical tuberculous lymphadenopathy is Yin syndromes, which are attributed to deficiency of internal vital and subsequent demonstration of external syndrome. Early treatment is

appropriate for eradication. At present, main principle of treatment bases on expelling pathogens and pus by strengthening vital qi, to promote discharge of toxic pus and avoid formation of sinus and fistula. For patients in the break-down stage, they are real pathogenic factors in addition to deficiency of internal vital; the main principle of treatment is to supplement the deficiency and to subsequently remove phlegm<sup>[3]</sup>.

At present, conventional anti-tuberculosis treatment of cervical tuberculous lymphadenopathy can not effectively inactivate tuberculous pathogens in lymph nodes due to limited concentration of drug that reaches lymph node. This causes swollen lymph nodes very difficult to be resolved, and that skin ulcer and ruptured lymph nodes can not heal effectively; this prolongs duration of anti-tuberculosis treatment, increases dose

of anti-tuberculosis regimen, and thus gives rise to more toxic reactions<sup>[4]</sup>.

Chinese medicine treatment for cervical tuberculous lymphadenopathy disease can correct the *Yin* and *Yang* balance of the body timely, and achieve its treatment role. Regimen of scrofula treatment includes Fritillaria, Prunella vulgaris, seaweed, Scrophularia, oyster, Kunbu, white mustard and other medicine, which have the function of dispelling phlegm and node. It is easy to get pathogenic heat after long-term scrofula. Therefore, it is necessary to add silver flower, Scutellaria, cat claw grass and forsythia which have effects of soothing liver, clearing heat, and venting heat<sup>[5, 6]</sup>. Scrofula generally has longer medical history, and blood stasis will eventually occur in the long run. Addition of Qishu and Sanling which have the functions of detumescence, promoting blood circulation, and resolving blood stasis into the regimen is necessary; when combined with the drugs aforementioned, it has effects of soothing abscess, promoting granulation and blood circulation, and eliminating toxic pus. This can promote better metabolism of capillaries at lesion site, lesion can be self-disrupted to allow penetration of drug into the lesion and lymph node inflammation can be eradicated; it has complete cure effect<sup>[7]</sup>.

This study by the authors showed that post-treatment total effective rate, incidence of complication, CD3+, CD4+, CD8+, CD4+/CD8+ of cervical tuberculous lymphadenopathy patients in the control group when compared to experimental group, showed  $P < 0.05$ , i.e. statistical analysis showed significance of the data. Post-treatment data of CD3+, CD4+, CD8+, CD4+/CD8+ of cervical tuberculous lymphadenopathy patients in both control and reference groups were compared with pre-treatment data;  $P < 0.05$ , statistical analysis showed

significance of the data.

Based on the above conclusions, clinical value of oral administration and external therapy of traditional Chinese medicine for treatment of cervical tuberculous lymphadenopathy is more significant than that of conventional anti-tuberculosis treatment.

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