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Research Article

**EVALUATION OF THE EFFICACY OF CHEMOTHERAPY IN  
TUBERCULOSIS OF SPINE**<sup>1</sup>Dr. Muhammad Awais Saeed, <sup>1</sup>Dr. Zunaira Siddiqui, <sup>2</sup>Dr. Asma Razzaq<sup>1</sup>DHQ Teaching Hospital, Dera Ghazi Khan.<sup>2</sup>DHQ Faisalabad**Abstract:***Objective:* To evaluate the efficacy of chemotherapy in tuberculosis of the spine.*Study Design:* A Retrospective Study.*Place and duration of the study:* From March 2016 to March 2017 at Jinnah Hospital, Lahore in the Department of Radiotherapy and Medicine Unit II.*Methods:* Fifty patients who met the selection criteria were identified. History and clinical examination were performed for the efficacy of radiographs of the breast, abscess, chemotherapy and bipolar areas of the affected area. Clinical examination did not show any symptoms of pain, sinusitis or abscess, and at the end of 12 weeks, no symptoms were observed in the radiological treatment of spinal cord injury.*Results:* Of the 50 patients, 19 were male and 31 were 18 to 60 years old. The thoracic spine was commonly included (24 patients) according to the site of injury, lumbar spine in 16 patients, and thoracolumbar junction in 10 patients. At the end of the follow-up, 30 patients achieved a favorable condition and 20 patients had an unfavorable condition.*Conclusion:* We concluded that spinal tuberculosis can be treated effectively with chemotherapy.**Key words:** Spinal caries, radiological healing of spinal cord injury, antituberculosis treatment.**Corresponding author:****Dr. Muhammad Awais Saeed,**  
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**INTRODUCTION:**

Tuberculosis (TB) is caused by Mycobacterium tuberculosis and is one of the oldest diseases in the world. Extrapulmonary tuberculosis accounts for about 15% to 20% of tuberculosis cases. Spinal tuberculosis is the most common skeletal tuberculosis and constitutes approximately 50% of all cases. Spinal tuberculosis was discovered by Pott in 1776 and is the result of hematogenous spread from the primary approach. The most common site is the thoracolumbar junction, but any part of the spine may be involved. Before the advent of chemotherapy in 1994, treatment was mainly composed of bed rest, but after treatment with chemotherapy and surgery, the result began to improve. With the advent of chemotherapy, there has been a general trend towards conservative treatment. Specific and effective conservative treatment is now the mainstay of treatment. Surgical treatment is considered for spinal instability or progressive neurological symptoms. The Medical and Research Council and the Working Group (MRC and WP) recommended chemotherapy as a standard first-line therapy. Chemotherapy is currently recommended. The aim of my study was to observe the results of non-surgical outpatient treatment of spinal tuberculosis.

**MATERIALS AND METHODS:**

This Retrospective Study was held from March 2016 to March 2017 at Jinnah Hospital, Lahore in the Department of Radiotherapy and Medicine Unit II. All male and female patients 18 years of age and

older, thoracolumbar spine tuberculosis were included in the study. Patients were excluded from pregnancy, diabetes mellitus, motor deficit on examination, kyphosis > 40 degrees on radiography, and three or more thoracolumbar vertebrae. Patients who applied for the treatment of low back pain in our hospital's OPD were my case study. Fifty patients who met the selection criteria were identified and informed consent was obtained for their inclusion in the study. The demographic profile was recorded (age, gender). Clinical examination was performed for the breast or abscess and two-ended x-rays were taken from the affected area. Chemotherapy was initiated against tuberculosis with the initial phase of the four drugs. Patients were followed up in OPD and pain was assessed using a numerical rating score (NRS). The results of the study were evaluated 12 weeks after the beginning of chemotherapy. If the clinical examination did not show any symptoms of pain, sinusitis or abscess and no radiological improvement of the spinal lesion at the end of 12 weeks, the efficacy was found to be appropriate. All this information was collected with a specially designed proforma. All information collected was entered into SPSS version 15.0 and qualitative and quantitative variables were calculated. The data were stratified by age to address the modifier.

**RESULTS:**

There were 19 males (38%) and 31 females (62%). The male to female ratio was 1: 1.6 (Table 1).

**Table 1: Frequency distribution of patients according sex (n=50)**

<b>Sex</b>	<b>Frequency</b>	<b>%age</b>
Male	19	38
Female	31	62

**Male to female ratio 1:1.6**

The patients were divided into the following age groups (Table 2). The mean  $\pm$  standard deviation between the ages was  $34.62 \pm 13.95$  years.

Table 2: Frequency distribution of patients according to age (n=50)

Age (years)	Frequency	%age
18 – 32	26	52
33 – 46	13	26
47 – 60	11	22

*SD Standard deviation*

*Mean±SD 34.62±13.95*

According to the lesion site, thoracic spine involvement was most frequent in 24 patients (48%), thoracolumbar junction was in 10 patients (20%) and in lumbar spine 16 (32%) (Table 3).

Table 3: Frequency distribution according to site of lesion

Site of lesion	Frequency	%age
Thoracic	24	48.0
Thoracolumbar junction	10	20.0
Lumbar	16	32.0

All patients had pain before starting treatment. At the end of the study, 37 (74%) patients were painless and 13 (26%) patients did not recover. Twelve of the 50 patients had sinusitis or abscesses at the start of treatment. At the end of the study, 5 patients (41.67%) remained with breast or clinically abscess. All patients had an active radiological disease before starting treatment. At the end of the study, spinal injury was improved radiologically in 30 patients. There were no radiological treatments in 20 patients (40%) (Table 4.5).

Table 4: Pre-treatment frequencies of variable

	Frequency	%age
Pain (using NRS)	50	100
Sinus or abscess	12	24
Radiological healing	-	-

Table 5: Follow-up after 12 weeks

	Frequency	%age
Pain (using NRS)	13	26
Sinus or abscess	5	41.67
Radiological healing	30	60

At the end of 12 weeks after the onset of ambulatory chemotherapy, 30 patients (60%) and 20 patients (40%) remained in an unfavorable condition (Table 6).

Table 6: Frequency distribution according to final outcome (n=50)

Outcome	Frequency	%age
Favourable	30	60
Unfavourable	20	40

### DISCUSSION:

Spinal tuberculosis is rare in the Western world. In developed countries, the majority of patients with spinal tuberculosis are migrants from countries where tuberculosis is endemic. Tuberculosis is a major public health problem in many parts of the world, especially in developing countries. With the advent of chemotherapy, there has been a general trend towards conservative treatment. In a study by Nene and Bhojraj, the average age was 37 years. In another study by Parthasarathy et al., The average age of the patients was the youngest age group. In a study by Park et al., The mean age of the patients was  $44.07 \pm 16.57$ . In our study, the mean age of patients during chemotherapy was  $34.62 \pm 13.95$  years and ranged from 18 to 60 years (Table 2). Patients were presented in an earlier age, comparable to the study of Nene and Bhojraj<sup>7</sup> (the same sub-generation) in India. In underdeveloped countries, it affects people in the youngest age group. In developed countries, it is mostly related to the elderly. Of 50 patients, 31 (62%) were female and 19 (38%) were male. The male to female ratio was 1: 1.63 (Table 1). In a study by Nene and Bhojraj, 71% were female and 29% were male. In another study by Parthasarathy et al., 47.40% were women and 52.60% were men. In a study by Dharmalingam, 27% of women and 73% of men were reported. Kursat and his friends in his study 29% female, 71% male. In a study by Park et al., 69 patients were male (50.40%) and 68 were female (49.60%). In our study, because it constitutes 52% of the female population, women have female domination in all areas because women are preferred to men in all areas. Therefore, they could not meet their nutritional demands and were prone to diseases such as tuberculosis. In a study of Nene and Bhojraj, this included only thoracic spine cases. Thoracic involvement (85%) and thoracolumbar junction (15.7%) were included in the study. The most common vertebral area in our study was thoracic junction (48.0%), lumbar (32%) and thoracolumbar (20%) (Table 3). The prevalence in the dorsal column is due to the close anatomical relationship with the lungs, which is the most common site of tuberculosis insinuation. In a 40-month follow-up, Nene and

Bhojraj abscess were reported to be improved by medical treatment. In the 12th report of the MRCW section on spinal tuberculosis, the resolution rate was similar in all series. 83% of the lesions recovered in 12 months. The study conducted by Parthasarathy, 80% abscesses improved in 12 months. In our study, 12 patients with sinusitis and abscess developed 12 patients and 7 patients (58.3%) improved in 12 weeks. The results of this study were lower than those of long-term follow-up studies because the abscess or paranasal sinuses required a longer time to resolve them. In a study by Nene and Bhojraj, radiological treatment was reported in 74% of the cases within 12 months. In another study by Parthasarathy, 80% radiological treatment was reported within six years. In my study, spinal cord injury was improved radiologically in 60% of patients in 12 weeks. Since the study was short term, radiological treatment was lower in this study. The results can be improved with a longer run-time and follow-up. In a study by Nene and Bhojraj, results of 74% positive results were reported in 12 months with non-surgical outpatient treatment. In a study by Parthasarathy, a positive condition was reported in 94% of patients within 10 years. In this study, 60% of patients achieved a favorable condition in 12 weeks. Our results were lower than other studies because this is a short term. Results can be improved with a longer run-time and follow-up.

### CONCLUSION:

Chemotherapy is very effective in the treatment of spinal TB with vertebral bodies without paraplegia.

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