

Clinical Outcome of Pott's Spine with Twelve Months of Chemotherapy

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ABSTRACT

Introduction: Chemotherapy remains the mainstay of treatment of pott's spine. There is lack of consensus regarding the duration and regime of chemotherapy. This study aims to see the clinical outcome of pott's spine treated with 12 months, 3HRZE and 9HR, of chemotherapy.

Methods: This is a prospective study conducted at Shree Birendra Hospital from 2011 to 2018. A total of forty five pott's spine patients were diagnosed and started chemotherapy. They were diagnosed clinicoradiologically and biopsy was done only in eight patients. All patients were treated with 12 months of chemotherapy, 3HRZE and 9HR, irrespective of conservative or surgical treatment. During this period only thirty seven patients were completed chemotherapy from our centre and they were included in our study. They were followed up for 12 months. Data were analysed in SPSS version 21.

Results: Out of 45 patients, A total of 37 patients were completed 12 months chemotherapy and followed up. Out of 37 patients 25 were treated conservatively and rest were operatively along with chemotherapy. 19 patients had thoracic & thoracolumbar infection and 18 had lumbar infection. All the patients were improved clinicoradiologically.

Conclusion: All the pott's spine patients were improved clinicoradiologically with 12 months of Chemotherapy.

Keywords: Chemotherapy, clinicoradiological, Pott's spine

INTRODUCTION

Nearly 30 million people suffer from tuberculosis around the world.¹ Incidence of musculoskeletal TB is one percent of all TB. Spinal TB is most common form of skeletal involvement and it is about 50 percent of total skeletal TB.²

Pott's spine is a medical disease so the main treatment modality is conservative i.e. Chemotherapy. There are various articles regarding chemotherapy duration ranges from 6 to 24 months.³ Multidrug resistant tuberculosis has developed because of inadequate treatment regime, insufficient patient adherence, uncontrolled distribution and trade of drugs, as well as lack of

availability and poor quality of chemotherapy.⁴ Though chemotherapy is the main treatment of spine tuberculosis, the addition of surgical intervention in selected cases results in optimum outcome in terms of pain alleviation, neurological prevention, spinal alignment and eventually early return to work.⁵ Neurological complications due to pott's spine seem to be "relatively benign" if early adequate medical and surgical managements were employed.⁶

The objective of this study is to see the clinical outcome of pott's spine with 12 months, 3HRZE & 9HR, of chemotherapy irrespective of conservative or surgical treatment.

METHODS

This study was conducted at Shree Birendra Hospital from 2011 to 2018. There were total of 45 patients. They were presented with back pain or difficulty in walking or bed ridden. All the patients were admitted for investigation and further management. All routine blood test (TLC, DLC, ESR, CRP, LFT), Radiological investigation (xray and MRI) performed in all patients. Biopsy performed only in 8 patients, otherwise diagnosis made only by clinicological method.

All the patients were classified according to GATA classification of spinal tuberculosis.⁷ Type 1A and 1B managed conservatively, type 2 and Type 3 managed surgically along with chemotherapy. All patients

received 3 months of HRZE and 9 months HR irrespective of treatment modality i.e. Conservative or surgical. T Pyridoxine 10mg given to all patients for 12 months. All the patients were followed up at 3,6,12 months. They were assessed for their functional status with the help of modified McCormicks scale⁸ and also assessed fusion with the help of Bridwell fusion scale for surgical cases. Multidrug resistant tuberculosis were excluded in our study.

At the end of study period, only 37 patients were completed chemotherapy from our hospital. Eight Patients could completed chemotherapy from other health centre and could not follow up so they were excluded in our study. The data were analysed in SPSS version 21.

GATA Classification of spinal tuberculosis

Type	Lesion
TypeIA	Lesion located in vertebra, one level disc degeneration, no collapse, no abscess, no neurological deficit
TypeIB	Abscess formation, one or two level disc degeneration, no collapse, no neurological deficit
TypeII	Vertebral collapse, Abscess formation, Kyphosis (Correctable), stable deformity, with or without neurological deficit. sagittal index < 20 degree
TypeIII	Severe vertebral collapse, Abscess formation, severe kyphosis, instable deformity, with or without neurological deficit. Sagittal index > 20 degree

RESULTS

In this study, There were total of 45 patients with pott's spine but we could follow up only 37 patients who had completed 12 months of chemotherapy. Among a total of 37 patients 18(48.6%) were male and 19(51.4%) were female. The age of the patients ranged from 15 to 68 years with mean age 41.73±16.5. The duration of symptoms ranged from 6 weeks to 8 months. According to GATA classification, 25 patients fall in type 1A&1B, 8 patients Type 2 and 4 patients Type 3. Out of 37 patient 25(67.6%) were treated conservatively (GATA type IA&IB) whereas 12(32.4%) were treated with surgery (GATA type II&III) along with chemotherapy. Nineteen patients had Thoracic & thoracolumbar infection and eighteen had at lumbar level. There is

improvement in Neurology, back pain and leg pain VAS score pre & post treatment. According to Modified McCormicks scale, we grade all the patients pre and post treatment. According to Bridwell fusion scale, Out of twelve operated patients, 2 grade I, 7 grade II and, 3 Grade III.

Modified McCormicks Scale(MMS)

grade	Pretreatment MMS	Posttreatment MMS
I	25	30
II	3	3
III	4	
IV	2	3
V	3	1

DISCUSSION

The skeletal manifestations of the disease are seen mainly in the spine but the infection may appear in any bone or any synovial or bursal sheath. The predisposing conditions include chronic debilitating disorders, diabetes, drug abuse, prolonged corticosteroid medication, AIDS and other disorders resulting in reduced defence mechanisms.⁹

In this prospective study, we analysed the clinical outcome of pott's spine patients treated with twelve months of chemotherapy. The good functional outcome was observed in all the patients at the end of treatment, irrespective of whether they were treated conservatively or by surgery along with chemotherapy.

In this study, There was mild female predominance(51%),which is comparable with South Africa study where 58% was observed.¹⁰ The result were in contrast to other study where there were mild male dominance.¹¹ The mean age was 42±16.5 years which was comparable to the Chinese study where 43 years seen.¹²

The Dorsal and Lumbar vertebrae are the common sites of Pott's spine infection but cervical spine is rare. In our study, most of the patients had lumbar spine infection(48.6%) followed by Dorsal spine.No pott's spine case seen in cervical spine. This was comparable with Korean study where 44.8% of the patients had lumbar spine infection,31.3%had dorsal spine and none with cervical spine disease.¹³

In our study,Back pain is the commonest presenting symptoms.The pre treatment Back pain VAS score ranges from four to seven and improved to one to three post treatment.Only one third patients have neurological deficits at the time of presentation.This was similar with a study from Brazil where all the patients had axial pain and 39.5% had neurological deficit.¹⁴

Severity of the disease is directly proportional to the aggressiveness of the treatment. Out of 37 patients,25(67.6%) were conservatively(GATA type IA&IB) treated. Twelve patients(GATA type II &III) were surgically treated. Our finding were comparable with Medeiros RS et.al., study

where 71%patients treated conservatively.¹⁴ In Contrast to our study,only 47.9% patients received conservative treatment in Bodapati PC et.al study.²

Pott's spine is a medical disease but the duration and regime of chemotherapy is always controversy. We have given 12 months chemotherapy with 3HRZE & 9HR.The functional outcome assessment was carried out with the help of Modified Mc Cormicks functional outcome scale⁸ recorded at the time of initiation of treatment, 6 months and 12 months follow up. All the patients were improved clinicoradiologically after completion of chemotherapy. In contrast to our regime,the other are 2 months HRZE and 6,9,18 months of HR. The clinical and radiological result of 6 and 9 months chemotherapy regime were comparable to those at 18 months.¹⁵ Recurrence after a short course regime has also been described, five of eight patients who had six months regime relapsed.¹⁶ So, The 12 months chemotherapy regime would be better option in the treatment of pott's spine in our endemic region.

CONCLUSION

There is clinicoradiological improvement in all pott's spine patients with 12 months of Chemotherapy,3HRZE & 9HR, irrespective of conservative or surgical treatment.We can apply in other institute and national protocol as well.

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