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Research Article

**NEUROLOGICAL SYMPTOMS AND SIGNS OF CNS
TUBERCULOSIS IN PATIENTS**Dr. Muhammad Adeel¹, Dr. Adeena Tahir², Dr. Foha Razi¹¹Nishtar Hospital, Multan²Mayo Hospital, Lahore

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Abstract:

Introduction and objective: Common presentations of tuberculosis are primary complex, tuberculous lymphadenitis and progressive primary disease. The basic aim of the study is to analyze the neurological symptoms and signs at the presentation with CNS tuberculosis. **Methodology of the study:** This cross-sectional study was conducted in Nishtar Hospital, Multan during January 2019 to July 2019. In this study 50 children aged from 6 month to 13 years suspected of having tuberculous meningitis were included in the study. **Results:** A total 50 patients were included in the study. Out of these 50 patients 32 patients were in highly probable TBM group and 18 cases in group II (Probable TBM) and 3 patients belonged to group III (Possible TBM). Out of these 50 patients 27(50.94%) patients were male and 23 (49.05%) were females with male to female ratio of 1.03:1. **Conclusion:** It is concluded that early recognition and timely treatment of CNS TB is critical if the considerable mortality and morbidity associated with the condition is to be prevented.

Corresponding author:Dr. Muhammad Adeel,
Nishtar Hospital, Multan

QR code



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INTRODUCTION:

Tuberculosis can affect any tissue or system of body. Common presentations of tuberculosis are primary complex, tuberculous lymph adenitis and progressive primary disease. Due to introduction of BCG vaccination just after birth the clinical pattern of tuberculosis has changed. No age is immune to tuberculosis. It may affect any age ranging from intrauterine to upper limit of paediatric age. Incidence of infection increases as the age advances¹. Tuberculosis is an ancient disease that is known to have existed in prehistoric times. Tuberculosis is one of the commonest communicable diseases in a majority of the developing countries². It is caused by the Mycobacterium tuberculosis, which usually affects the lungs but may cause lesion in any organ or tissue of human body. Among infectious diseases tuberculosis is at present the leading cause of death. In 1990, 1.7 billion persons, (1/3 of the world population) were infected with Mycobacterium tuberculosis. Eight million new cases of tuberculosis (pulmonary and extrapulmonary) occur yearly with 2.9 million deaths³.

In Pakistan, tuberculosis is generalized and wide spread. There have been two prevalence surveys conducted in 1960-62 and 1974-78 with similar results. According to these surveys 54% of the entire population is infected and this infection rate goes as high as 80% in age groups of 20-29 years and above. According to these surveys infection rate in children from 0-14 years of age was 25% in 1960-62 and 22% in 1974-78, 1.6% of the population above 10 years of age had chest radiograph suggestive of active cavitory or non cavitory pulmonary tuberculosis and 0.3% were sputum positive on microscopy and/or culture⁴.

Neurotuberculosis is one of the serious complications of primary tuberculous infection. Tuberculous meningitis is its most dreaded form and is the main cause of death and disability in children⁵. Tuberculous meningitis (TBM) the most dangerous form of extra pulmonary tuberculosis, occurs in 7-12% of tuberculosis patients in developing countries. In 1985, 5% of 4000 extra pulmonary cases of tuberculosis in the USA were due to tuberculous meningitis⁶.

Objectives of the study

The basic aim of the study is to analyze the neurological symptoms and signs at the presentation with CNS tuberculosis.

METHODOLOGY OF THE STUDY:

This cross-sectional study was conducted in Nishtar Hospital, Multan during January 2019 to July 2019. In this study 50 children aged from 6 month to 13 years suspected of having tuberculous meningitis were included in the study. All the data were collected and analysed using SPSS version 17.0.

RESULTS:

A total 50 patients were included in the study. Out of these 53 patients 32 patients were in highly probable TBM group and 18 cases in group II (Probable TBM) and 3 patients belonged to group III (Possible TBM). Out of these 50 patients 27(50.94%) patients were male and 23 (49.05%) were females with male to female ratio of 1.03:1. The variety of neurological signs and symptoms in these patients at the time of initial diagnosis is summarized in table 02. The reported length of any symptoms before admission ranged from 5 days to 4 months with the mean of 18.2 days and median of 20 days.

Table 01: Neurological symptoms or signs at the time of admission in 53 children with CNS tuberculosis

Symptoms/sign	No. of patients	Percentage (%)
1 Fever	53	100%
2 Irritability	10	18.86%
3 Lethargy	35	66.03%
4 Unconsciousness	35	66.03%
5 Seizures	50	94.33%
6 Weakness	10	18.86%
7 Hemiparesis	10	18.86%
8 Nuchal rigidity	30	56.60%
9 Brudzinski sign	25	47.16%
10 Kernig sign	25	47.16%
11 Deep tendon reflex abnormality	35	66.03%
12 Hypertonia	38	71.69%
13 Hypotonia	10	18.86%
14 Babinski sign	20	37.73%
15 Full anterior fontanelle	5	9.43%
16 Cranial nerve paresis	35	66.03%
17 Irregular respiration	20	37.73%

18	Posturing				20		37.73%	
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DISCUSSION:

Tuberculosis is still a major health hazard in children in India. Annual rate of infection (ARI) is 3%. Prevalence of active disease in the population is 15-25/1000 population, one fourth of them being bacillary or open cases of tuberculosis⁷. Thus out of total estimated 813 million population almost 15 million are infectious¹¹. Incidence of tuberculosis in children depends upon the magnitude of infectious adults who form the reservoir of tuberculous disease. Children having primary tuberculosis rarely if ever infect other children. Tuberculosis is more common among the socioeconomically deprived people. It is more common in non-white population of Western countries⁸. Children under the age of 5 years have an overall case rate five times higher than rate of children between 5-14 years. The gender ratio for paediatric tuberculosis is 1:1.

Tuberculosis is more prevalent in winter and spring season in the Northern hemisphere⁹. Close contact among family members during winter and more frequent coughing produced by winter and spring respiratory infections is a determining factor. Changes in mycobacterial disease morbidity and mortality are occurring due to HIV which predisposes to active Mycobacterial disease¹⁰.

CONCLUSION:

It is concluded that early recognition and timely treatment of CNS TB is critical if the considerable mortality and morbidity associated with the condition is to be prevented.

REFERENCES:

1. Dannenberg Jr AM, Tomaszefski Jr. JF. Pathogenesis of pulmonary tuberculosis In: Pulmonary diseases and disorders, 2nd edn. ed Fishman AP. New York, McGraw Hill 1988; 1821-1842.
2. Grange JM, Noble WC, Yates MD, Collins CH. Inoculation mycobacteriosis. *Exp Dermatol* 1988; 13: 211-220.
3. Inove T, Yoshikai Y, Matsuzuki G, Nomoto K. Early appearing g/d bearing T cell during infection with Calmette Guerin Bacillus J. *Immunol* 1991; 146: 2754-2762.
4. Youmans GP. Relation between delayed hypersensitivity and immunity in tuberculosis. *Am Rev Resp Dis* 1975; 111: 109-21.
5. Bothamley G, Hand Grange JM. The koch phenomenon and delayed hypersensitivity tubercle 1991; 72: 7-11.
6. Unanue ER. The regulatory role of macrophage in antigenic stimulation. Part II: Symbiotic relationship between lymphocytes and macrophages. *Adv Immunolo* 1983; 13: 1-136.
7. Orme IM. The kinetics of emergence and loss of mediator Tlymphocytes acquired in response to infection with mycobacterium tuberculosis. *J Immunol* 1987; 138: 293-298.
8. John M, Grange. Tuberculosis In: Topley and Wilson's. Principles of bacteriology virology and immunity eds. Edward Arnold London 1990; 3: 94-121.
9. Rook GAW. The role of vit D in tuberculosis. *Am Rev Resp Dis* 1988; 138: 768-770.
10. Festenstein F, Grange JM. Tuberculosis and the acquired immune deficiency syndrome. *J App bacteriol* 1991; 71:19-30.