

Case study on Tuberculous Meningitis (TBM)

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Abstract

Tuberculous Meningitis (TBM) is an inflammation of the meninges (membrane) around the brain or spinal cord and it's caused by Mycobacterium tuberculosis. The clinical features are headaches, behavioral changes, Fever, stiff neck, vomiting and for older children and adults progress from irritability to confusion, drowsiness and stupor. It's diagnosed by Examination of the Mycobacterium tuberculosis, blood culture, chest X-ray, CT scan of the head and skin test for tuberculosis (PPD skin test. TB meningitis treatment includes isoniazid, rifampin, pyrazinamide and moxifloxacin or levofloxacin and Corticosteroids.

Keywords: Tuberculous Meningitis; Mycobacterium tuberculosis; Fever; Cerebrospinal fluid

1. Introduction

Tuberculous Meningitis (TBM) is a type of meningitis is characterized by inflammation of the meninges (membrane) around the brain or spinal cord and it's caused by Mycobacterium tuberculosis

2. Risk factors

It can develop in children and adults of all ages. However, people with specific health problems are at greater risk of developing Tuberculous Meningitis.

Risk factors for TB meningitis include the person is having a history of:

- HIV/AIDS
- excessive alcohol use
- weakened immune system
- diabetes mellitus[1,2]

2.1. Signs & Symptoms

- Headaches and behavioral changes
- Fever
- stiff neck
- vomiting

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2.2. Older children and adults

- progress from irritability to confusion,
- drowsiness
- stupor

2.3. Complications

- Coma
- seizures
- hydrocephalus
- deafness
- mental retardation
- hemiparesis[3]

2.4. Diagnosis

- Examination of the cerebrospinal fluid.
- blood culture
- chest X-ray
- CT scan of the head
- skin test for tuberculosis (PPD skin test) [4]

2.5. Treatment

TB meningitis treatment includes isoniazid, rifampin, pyrazinamide and moxifloxacin or levofloxacin.

Corticosteroid drugs such as prednisone to reduce complications associated with the condition [5]

2.6. Prevention

Bacillus Calmette-Guérin (BCG) vaccine can help in controls the spread of TB infection [6].

3. Patient Profile

3.1. Baseline data

Mr. G, 25 years old man who belongs to Bareilly, he had come to hospital and got admitted in medicine ward. Finally he had diagnosed as tuberculous meningitis

3.2. Present history

Patient had come with the complaint of headache since 15 days and it is not relieved by medication, fever since 1 month, and vertigo since 15 days, and weight loss since 15 days.

3.3. Past history

History of alcohol intake for 2 years, however patient was not having any history of DM, HT and cardio vascular diseases.

3.4. Physical examination

Physical examination reveals Patient's sensorium is altered and in CNS examination, Glasgow coma score is E4 V4M6.

3.4.1. Investigation

- Blood test
- Urine test
- LFT
- MRI
- CSF analysis

Patient has undergone lumbar puncture and sample had sent for investigation. This investigation has confirmed that Patient has diagnosed as tuberculosis meningitis.

3.4.2. Management

- Patient has taken Inj. Cefixim, Inj. Esmogen, Inj. emeset, Inj. Mannitol, Inj. Fevestin, Inj. Dexa .
- Administered anti tuberculosis drug patient has monitored continuously.
- Propped up position has given.
- Liquid diet was allowed for patient.
- Patient has managed conservatively and symptomatically better.
- Patient got discharged after 10 days.

3.4.3. Nursing management

- Propped up position has maintained
- Continuously monitored patient's vital signs and spo2 values
- Assessed neurological status and avoided complications like injury, cerebral edema so on.
- Observed the sign of increased intracranial pressure
- Educated about the rest, healthy diet and identify of infectious process
- Provided comfort measures and minimized the noises

4. Conclusion

Tuberculous Meningitis is caused by Mycobacterium tuberculosis and its affects the brain or spinal cord.. If it is diagnosed promptly and with proper medication and supportive care Tuberculous Meningitis can be cured. It can be prevented by administering BCG vaccine.

Compliance with ethical standards

Acknowledgments

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Disclosure of conflict of interest

No conflict of interest.

Statement of ethical approval

- The present research work is just a observational case study so it is requires any ethical clearance.
- Formal permission has taken from the hospital.

Statement of informed consent

Informed consent has taken from the patient.

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