УДК 61:615.1(062)(476-25)
ББК 52я73
А 43
ISBN 978-985-21-1258-1

Jha N.K., Mazhar S.

RETROSPECTIVE ASSESSMENT OF PROBABILITY OF DEVELOPING TUBERCULOUS MENIINGITIS AND ITS SEVERITY IN ADOLESCENTS ON ADMISSION IN HOSPITAL

Tutor: PhD Litskevich L.V.
Department of Phthisiopulmonology
Belarusian state medical university, Minsk

Relevance. Tuberculous meningitis (TM) is the most severe form of extrapulmonary tuberculosis with high rates of morbidity and mortality (30-60%). Develops as an early or late complication of primary infection. Mortality is often associated with delayed diagnosis and treatment. Symptoms and signs of the disease are not specific. Modified scales with high specificity and sensitivity for detecting TM in adults are rare, but even with moderate specificity and sensitivity, diagnostic scales like Thwaites and Lancet are useful in assessment of probability of developing TM as they are informative and less time-consuming.

Aim: to assess the probability and severity of TM in a 16-year-old adolescent girl hospitalized at Republican Scientific and Practical Centre for Pulmonology and Tuberculosis using assessment scales (Thwaites diagnostic index, 2004 and Lancet Consensus System, 2010) and clinical data of patient during hospital stay.

Materials and methods. Retrospective study of medical card of a 16-year-old girl hospitalized at the RSPCPT on 04.04.2013 from children's infectious hospital. In this study presenting symptoms, history of close contact with bacterio-excrete person, signs of meningitis, chest X-ray data, brain imaging data like MRI, Ultrasound of abdominal organs and plan of treatment were assessed. In addition, lumbar puncture of patient was performed to evaluate biochemistry and MTB drug resistance in CSF. On the basis of data obtained from the patient's case history, 2 diagnostic indices were evaluated: Thwaites diagnostic index, Lancet consensus system.

Results and their discussion. The duration of clinical symptoms of more than 5 days mentioned in the study is most predictive symptoms for TM. Increase in protein, decrease in glucose amount in CSF also indicates TM. In early stages of the disease, neutrophils in CSF predominated over lymphocytes but gradual predominance of lymphocytes over neutrophils indicates a long-term existence of TM and poor prognosis. Culture of CSF showed infrequent presence of MTB because of low number of bacteria in CSF. The presence of MDR MTB in culture and neurological manifestations like seizures indicates the high severity of TM. Use of adjuvant therapy like prednisolone improved the neurological symptoms significantly in patient and doses were reduced gradually to prevent the development of side effects. Patient was assessed on Thwaites diagnostic index on the basis of 5 parameters: Age, WBC, Complaint duration, CSF WBC, CSF WBC% PNL and patient had a resulting rate score of -5 which strongly suggests etiology of *M. Tuberculosis* and excludes other bacterial etiologies. Patient was also assessed on Lancet consensus system on the basis of 20 parameters which includes Clinical criteria, CSF criteria, CNS imaging criteria and evidence of tuberculosis elsewhere and the patient had a resulting rate score of 13 which indicates probable TM.

Conclusion:

1. Diagnosing TM was difficult due to: diversity of clinical symptoms, low count of bacteria in CSF making it hard to detect the bacteria in culture and microscopy.
2. CSF microscopy and culture are considered gold standard in diagnosis of TM and should be done immediately when TM is suspected before appearance of neurological symptoms.
3. Clinical neurological manifestations (the development of encephalomyelitis) complicated by appearance of a single convulsive seizure indicate a high severity of TM.
4. To prevent the development of neurological complications and side effects of ATD adjuvant therapy like usage of corticosteroids in early phase of treatment showed very good results.
5. The use of scoring indexes like Thwaites diagnostic index and Lancet consensus system showed high probability of TM and their use is logical when TM is suspected in a medical institution on admission.