The Latest Modes of Diagnosis, Management and Prevention of Acute Meningitis

M. Tasdik Hasan*, Muhammad Yameen Hamid, Anindita Ghosh*****

Shaheed Suhrawardy Medical College, Dhaka University, Dhaka, Bangladesh
E-mail: yhamid91@yahoo.com

Background

Meningitis is an acute inflammation of leptomeninges and CSF caused by mainly bacteria, virus and less commonly fungus which has 50% case fatality rate if untreated. The most common symptoms are a stiff neck, high fever, sensitivity to light, confusion, headaches and vomiting. Meningitis is potentially fatal and should always be viewed as a medical emergency. Thus early diagnosis and effective management of suspected cases of meningitis will lead to significantly reduction in mortality.

Aims & Objectives

To study the latest modes of diagnosis and treatment have been discussed along with preventive measure.

Materials & Methods

This study was done by reviewing 15 journals, online clinical articles and clinical books from June, 2013 to July, 2013.

Results

In laboratory investigation, CSF profile shows different characteristics in bacterial and viral etiology. CSF pressure is elevated with low glucose level; high protein level and predominant neutrophil in bacterial cause. In viral cause pressure is almost normal, lymphocyte is predominant, glucose and protein levels are normal. PCR and ICT detecting bacterial DNA show 100% specificity. CT or MRI is not diagnostic usually. The latest treatment plan includes empiric therapy, specific therapy, adjunctive therapy by Dexamethasone, outpatient antimicrobial therapy & antiviral therapy and treatment of special situation. Empiric antimicrobial therapy should be started as soon as possible after diagnosis proven or suspected. Specific therapy depends on Gram's staining and culture of CSF. Ciprofloxacin is used successfully in multidrug resistant gram-negative bacilli. In HSV, VZV and CMV meningitis acyclovir and ganciclovir is given. Dexamethasone is effective in bacterial meningitis as adjunctive therapy. In special situation as in fulminant meningococcemia benzylpenicillin is drug of choice, in increased ICP mannitol is administered and patient is monitored ICU. Vaccines that are available to control the disease are meningococcal A conjugate vaccine, C conjugate vaccines (MCV4), tetravalent A, C, Y and W135 conjugate vaccines and meningococcal polysaccharide vaccines. Meningococcal A conjugate vaccine elicited a stronger response to group A antibody than the tetravalent vaccine.

Conclusions

Early recognition and initiation of appropriate empiric therapy can reduce the mortality to 10%. If rapid and specific identification of the etiologic agent is done and adjusting therapies are given as indicated, it will efficiently manage a patient with meningitis. Optimize management is possible in complicating features. Prevention can be done in epidemic areas by proper vaccination mentioning MCV4 and HIB vaccine.