



Clinical Assessment of Bacterial Meningitis and Supportive Care in Neonates

Michael Allan*

Department of Neurology, Stanford University, Stanford, United States

DESCRIPTION

Meningitis is an acute or chronic infection of the meninges, which are the protective membranes that coat the brain and spinal cord. Fever, headache, and neck stiffness are the most prevalent symptoms. Other symptoms include dizziness or altered consciousness, nausea, vomiting, and an inability to handle bright or loud lights. Young children frequently exhibit just general symptoms such as irritability, sleepiness, or poor eating. A non-blanching rash (one that does not fade when rolled over with a glass) may also be present. The inflammation may be caused by infection with viruses, bacteria or other microbes. Cancer, subarachnoid haemorrhage, chronic inflammatory illness (sarcoidosis), and certain medicines are examples of non-infectious causes. Because of the inflammation's proximity to the brain and spinal cord, meningitis can be fatal; thus, the illness is regarded as a medical emergency. A lumbar puncture, which involves inserting a needle into the spinal canal to collect a sample of Cerebrospinal Fluid (CSF), can be used to diagnose or rule out meningitis. Bacterial meningitis is a medical emergency caused by bacterial infection that causes inflammation of the meninges. Untreated, its fatality rate exceeds 100%, and even with contemporary antibiotics and advanced paediatric intensive care, the disease's mortality rate is around 5%-10%.

Clinical assessment

The clinical symptoms and signs of bacterial meningitis in children vary according to the child's age and the length of the sickness. Nonspecific symptoms include tachycardia and fever, as well as poor eating, irritability, lethargy, and vomiting. Shock, Disseminated Intravascular Coagulation (DIC), purpuric rash, and coma are all symptoms of fulminant sepsis, which is more likely in meningococcal meningitis. These symptoms, however, are more likely to appear later in the illness (median time between 13 and 22 hours), whereas nonspecific, often overlooked symptoms, such as leg pain, may appear within 8 hours in more than 70% of children with meningococcal meningitis and should prompt further immediate evaluation. Classical meningitis symptoms include nuchal stiffness, bulging fontanelle, photophobia, and a positive Kernig's or Brudzinski's

sign (more common in children aged 12 to 18 months). A recent comprehensive study discovered that the presence of meningeal symptoms raised the likelihood of meningitis diagnosis, but their absence decreased the risk. Seizures may occur in 20%-30% of children with bacterial meningitis, with *S. pneumoniae* and Hib infections being more common than *N. meningitidis*. According to a new study, the presence of complex seizures more than doubles the risk of meningitis. Focal neurological symptoms, as well as a diminished state of consciousness, may be observed.

Coma at presentation is associated with a worse prognosis than irritability or lethargy alone. To check for sepsis complications and advise fluid management, initial blood tests for complete blood count, coagulation studies, and electrolytes should be conducted. Serum glucose should be tested on a regular basis since it may be low in a kid with meningitis, contributing to seizures. Its measurement is also required for appropriate interpretation of CSF glucose. All individuals with suspected bacterial meningitis should have blood cultures taken.

They may be especially useful if a lumbar puncture is not possible. A positive blood culture result varies depending on the infecting organism; 40% of children with meningococcal meningitis will have a positive blood culture, but 50%-90% of *H. influenzae* and 75% of *S. pneumoniae* meningitis patients will have a positive culture result. C-Reactive Protein (CRP) and procalcitonin have both been used to differentiate between viral and bacterial meningitis. Several investigations have indicated that procalcitonin outperforms CRP in distinguishing between aseptic and bacterial meningitis. Procalcitonin levels have also been tested in conjunction with other clinical scoring systems to assess the risk of bacterial meningitis.

Supportive care

Any child with bacterial meningitis will require supportive care, which may involve cardiorespiratory assistance in a paediatric intensive care unit as well as guided management of symptoms such as seizures, cerebral edema, Secretion of Antidiuretic Hormone (SIADH), Disseminated Intravascular Coagulation (DIC) or shock. A consultant-supervised pediatric team provides early, protocolized, aggressive care, which improves survival and

Correspondence to: Michael Allan, Department of Neurology, Stanford University, Stanford, United States, E-mail: michallan@gmail.com

Received: 02-Jan-2023, Manuscript No. JPC-23-19966; **Editor assigned:** 05-Jan-2023, PreQC No. JPC-23-19966 (PQ); **Reviewed:** 19-Jan-2023, QC No. JPC-23-19966; **Revised:** 26-Jan-2023, Manuscript No. JPC-23-19966 (R); **Published:** 02-Feb-2023, DOI: 10.35248/2573-4598.23.9.211

Citation: Allan M (2023) Clinical Assessment of Bacterial Meningitis and Supportive care in Neonates. J Pat Care. 9:211

Copyright: © 2023 Allan M. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

outcomes. Any kid with evidence of respiratory compromise, threatening airway, persistent shock, recurrent seizures, or increased intracranial pressure should be considered for early intubation and ventilation. In the first 48 hours, a recent cochrane meta-analysis revealed some evidence to support the use

of maintenance fluids rather than restrictive fluids. In children receiving maintenance fluids, the rate of early spasticity and seizures decreased, as did the rate of later total neurological sequelae.