Prognosis and Management of Meningitis

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Commentary

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DESCRIPTION

Meningitis is an acute or chronic infection of the meninges, which are the protective membranes that coat the brain and spinal cord. Fever, headaches, and stiff necks are the most frequent signs and symptoms. Other signs and symptoms include an inability to handle bright or loud noises, altered consciousness or states of disorientation, and nausea and vomiting. In young children, nonspecific symptoms like irritability, sleepiness, or poor feeding are frequently all that are present. A rash that does not disappear when a glass is rolled over it is known as a non-blanching rash.

Viral, bacterial, fungal, or parasitic infection may be the root of the inflammation. Malignancy (cancer), subarachnoid hemorrhage, chronic inflammatory disease (sarcoidosis), and specific medications are examples of non-infectious causes. Due to the inflammation's close proximity to the brain and spinal cord and the potential for life-threatening consequences, meningitis is regarded as a medical emergency. A lumbar puncture, which involves inserting a needle into the spinal canal to obtain a sample of Cerebrospinal Fluid (CSF), can determine whether meningitis is present or not. Antibiotics or vaccine are both effective short- and long-term protection against several meningitis causes. Some behavioral interventions might also be successful.

Research & Reviews: Neuroscience

Bacterial meningitis is almost usually fatal if left untreated. The WHO estimates that the overall fatality rate of bacterial meningitis is 16.7% (with treatment). Contrarily, viral meningitis typically resolves on its own and is rarely fatal. After therapy, the age of the patient and the underlying condition determine mortality (risk of death) from bacterial meningitis. 20–30% of neonates may pass away from a case of bacterial meningitis. This risk is far reduced in older children, whose mortality is just about 2%, but it increases once more in adults, to about 19-37%. Aside from age, other factors that can predict mortality include the pathogen and the length of time it takes for it to be eliminated from the Cerebrospinal Fluid (CSF), the severity of the generalized illness, a decreased level of consciousness, or an abnormally low white blood cell count. Group B streptococci, coliforms, and *S. pneumoniae* are less likely to result in meningitis than *H. influenzae* and *meningococci*. Meningococcal meningitis also has a lower fatality rate (3–7%) in adults compared to pneumococcal illness.

Damage to the nerve system in children has the potential to cause a number of problems, including sensorineural hearing loss, epilepsy, learning and behavioral issues, as well as diminished intellect. These affect 15% or so of survivors. It's possible that some hearing loss can be reversed. In 66% of adult instances, no impairment develops. Deafness (present in 14%) and cognitive impairment (present in 10%) are the main issues.

Even after treatment, the risk of death from tuberculous meningitis in children remains high (19%), and a sizable majority of those who survive have ongoing neurological issues. Only about one-third of patients survive without incident.

Management

Untreated meningitis can be fatal and has a high death rate; delaying treatment has been linked to worse outcomes. As a result, broad-spectrum antibiotic treatment shouldn't be postponed until confirmatory tests are being carried out. Guidelines advise giving benzylpenicillin before being transferred to the hospital if meningococcal illness is detected in primary care. If shock or hypotension (low blood pressure) are present, intravenous fluids should be given. It is unclear if intravenous fluid administration should be restricted or administered consistently. Regular medical review is advised to identify early-onset serious problems brought on by meningitis and to admit the patient to an intensive care unit if considered necessary.