

Clinical Profile and Outcome of Patients Diagnosed with Central Nervous System Infection Admitted in a Tertiary Hospital in Bataan

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Meningitis is the 9th leading cause of mortality for ages 1-4 years old, and 8th for ages 5-9 years old.

Central Nervous System Infection (CNSI) must be entertained on patients who presents signs and symptoms of CNS infection such as headache, nausea, vomiting, irritability, and altered state of consciousness.

Currently, there are no available studies that focuses in determining the clinical profile and outcome of patients diagnosed with CNSI in Bataan and nearby provinces

OBJECTIVE

To determine the clinical profile and outcome of pediatric patients diagnosed with Central Nervous System Infection (CNSI) admitted in a tertiary government hospital in Bataan.

DESIGN

This is a retrospective cohort study in a tertiary government hospital from January 2017 to December 2021.

• SUBJECTS

Pediatric patients aged 1 month to 18 years who had a final diagnosis of viral, bacterial, TB meningitis, fungal, parasitic and brain abscess based on clinical and/or laboratory findings.

A total of 186 children were included in the study.

Results

- Majority of patients with CNSI came from the age group of 5 years old (70 or 37.53%).
- Majority of the patients came from Mariveles (18.82%), then followed by Dinalupihan (14.52%).
- 92.47% have no comorbidities
- Statistically significant clinical features were the presence of seizures (p 0.023), decrease in sensorium (p <0.001), motor abnormalities or weakness in motor strength (p <0.001), and bulging fontanel

Results

- Diagnostic results suggestive of CNSI were leukocytosis with neutrophilic predominance, lymphocytic pleocytosis, increased cerebrospinal fluid (CSF) protein, low CSF glucose, and an abnormal CT scan.
- The most common etiologic agents identified were Viral and Bacterial.
- Majority of the immunization status of the patients were complete and the acuteness of symptoms were less than 7 days.

Results

- The outcome, based on the modified Rankin Scale, showed that the presence of the following factors puts the patient at risk of developing none to mild disability
 - Presence of seizures upon admission
 - Diagnosed with bacterial meningitis

Results

- The outcome, based on the modified Rankin Scale, showed that the presence of the following factors puts the patient at risk of developing moderate to severe disability
 - Decrease in sensorium
 - Motor abnormalities
 - Bulging fontanel
 - Elevated CRP
 - Abnormal CSF studies
 - Abnormal CT scan
- Diagnosed with Tuberculous meningitis
 - Diagnosed with Brain abscess

Conclusion

- This study had shown that Mariveles and Dinalupihan had the highest incidence of CNSI and is more common for the age group of less than 5 years old.
- Clinical features to look out for CNSI are the presence of seizures, decrease in sensorium, weakness and bulging fontanel.
- CSF analysis and CT scan should also be done and the the most common etiologic agents identified were viral and bacterial.
- Early recognition of the symptoms and identification of the risk factors like age, area of residence, and duration of symptoms could help in the overall management of the patients.

Recommendation

- Proper education and identification of patients with meningitis-like illness on the different municipalities could be considered specially on areas with the top incidence of CNSI.
- Compliance to the national immunization program as well as booster doses should be enforced to prevent vaccine preventable CNSI.
- A prospective research can be recommended on those diagnosed with central nervous system infection to properly document the long term consequences of the disease.