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Clinico-Epidemiological Study of Acute Encephalitis in Paediatric Population: North India

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To study the etiology and clinical profile of Acute Encephalitis Syndrome in children aged 3 months to 12 years. Cross-sectional hospital based observational study, conducted in a tertiary care centre, North India. Children of age 3 months- 12 years with fever (axillary temp. > 38°C) and acute depression of consciousness or mental deterioration for more than 12 hours with or without motor or sensory deficit and with total duration of illness at time of admission < 1 week were included in the study. The main outcome measures were the clinical presentation and etiological agent causing AES. One of the eighty enrolled cases, the majority of patients in the present study were in the 1 - 5year age group (45%). Among the enrolled cases with fever and altered sensorium most common presentations were seizures 52(65%) followed by vomiting 49(61.2%) and headache (22.5%). Conclusive diagnosis (definitive or probable) was reached in 41(51%) patients. Most common etiological agent associated with AES was of viral aetiology 18 (22.5%), followed by pyogenic in 11 (13.75%) cases. Presence of anaemia and GCS score < 8 and electrolyte imbalance were found as independent risk factors to be associated with poor patient outcome. Acute encephalitis syndrome (AES) can lead to serious central nervous system involvement leading to high morbidity and mortality. It can lead to long-term neurological sequel. There are different etiological agents causing AES, including bacteria, viruses, protozoa and parasites. The most common group labelled as a cause of AES are of viral etiology. The incidence of AES varies in different studies, but the average incidence is between 3.5 and 7.4/100,000 patient-years, the incidence being higher in children. The etiology of AES can be broadly grouped under infective (bacteria and viruses) or non-infective category, which can vary widely depending on the geographical location and host factors. Based on various surveillance reports and outbreak investigations, Joshi et al. 2012 classified the history of AES in India into 3 periods: (a) before 1975 - few cases with JE aetiology were identified (b) between 1975 and 1999 when increasing no of JEV cases reported with frequent outbreaks that resulted in the development of JE endemic regions (c) between 2000 and 2010, rise in non-JE outbreaks mostly caused by viruses such as Chandipura virus (CHPV), Nipah virus (NiV), and other enteroviruses. AES, though a rare diagnosis in children, is associated with significant morbidity and high mortality, particularly in a developing country like India. As suggested by most studies from India, majority of cases of AES are being viral in origin, where no specific treatment is available or highly effective, early institution of aggressive supportive care may be able to decrease mortality and long-term morbidity. Unlike other studies from India, Herpes simplex virus causing AES in children was not observed in our patient population. Measles and Dengue were among the most common viral aetiologies seen. Thus, endemic infections to a particular region should be considered as important differentials while treating the patients. Limitations noted in our study were relative short study period with small sample size, non-availability of diagnostic test for autoimmune encephalitis and loss of follow up of children for long term complications and sequel. Despite extensive testing, the aetiologies of about half of the cases remains elusive. New strategies to diagnose AES and continued analysis of clinical features and case histories should help us improve our ability initiate early pathogen specific treatment.

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