ABSTRACT

TITLE
Clinical spectrum, diagnostic and outcome predictors of patients with acute febrile encephalopathy in a tertiary hospital in south India

INTRODUCTION
Acute Febrile encephalopathy is a clinical syndrome of short duration fever which is either accompanied or followed by altered mental status. In this study we attempt to look at the different spectrum of etiology of acute febrile encephalopathy including both infectious and non-infectious and their outcome in a tertiary hospital in South India through a period of one year so as to learn the different seasonal variations.

AIMS AND OBJECTIVES
- To study the etiology and outcome (mortality and functional outcome) of patients presenting with acute febrile encephalopathy.
- To study the clinical and laboratory predictors in the diagnosis of etiology (Infectious and non-infectious) and outcome of patients with acute febrile encephalopathy

METHODOLOGY
STUDY DESIGN: Prospective observational study

SETTING: Christian Medical College Vellore, tertiary hospital (2632 beds) in Tamil Nadu, South India.
**PARTICIPANTS**: All patients >16 years of age with short duration fever (<14 days) and altered mental status and/or meningeal signs or symptoms.

**RESULTS**
A total of 265 patients fulfilled the eligibility criteria and were included in the study during the one year period (June 2015 to May 2016). The study group had patients in the age ranging from 15 to 86 (Mean 48.16). There was slight male predominance. The primary etiology was found to be infectious in 71% (n=187) of the cases and non-infectious in 29% (n=78). Among the infectious causes, bacterial was 25% (n=47), tubercular 24% (n=45), viral with specific etiology, 9% (n=19) and unknown etiology 34.2% (n=64). Fungal and protozoal were also found with 1% each (n=2). Among the non-infectious causes, heat stroke was 61% (n=48), metabolic (hyponatremia, hyperglycaemia, hypercalcemia, hepatic encephalopathy) 18% (n=14), toxin 13% (n=10), autoimmune (n=4) and those with other etiologies, (n=2). The overall mortality at 1 month was 20.1% (n=51) of which 30 were infectious and 20 were non-infectious. On multivariate analysis, head ache and nuchal rigidity at presentation were independent predictors of infectious etiology and GCS<8, intubation at admission, mRS >2 at admission and diabetes were independent predictors for mortality at 1 month. There was also a seasonal trend seen for scrub typhus, EBV infection and heat stroke.

**CONCLUSION**
Acute febrile encephalopathy is caused by a wide spectrum of etiology and has the high mortality and morbidity. Headache and nuchal rigidity in patients presenting with
AFE were predominantly due to infections. Low sensorium, history of Diabetes, high modified Rankin score and need for intubation at admission were independent risk factors for mortality among this group of patients. It is necessary for the clinician to keep the differentials broad when such a patient presents to the emergency department so as to initiate empiric therapy appropriately and look for predictors of diagnosis and outcome.

**KEYWORDS**
Acute febrile encephalopathy, encephalitis, South India, Mortality, predictors