Over-investigated and under-treated: children with febrile convolution in a Malaysian district hospital

Lai N M, Tan M L, Quah S Y, Tan E L, Foong K W

ABSTRACT

Introduction: We conducted a retrospective audit on the inpatient assessment and care of children admitted with febrile convolution to Hospital Batu Pahat, a district hospital in Malaysia, using the Malaysian national clinical practice guidelines and the American Academy of Paediatrics practice parameters on febrile convolution as the reference standards.

Methods: The case notes of 100 consecutive children admitted in 2004 were analysed. The documentation of major clinical features, selection of investigations, the timeliness of antipyresis and frequency of parental education were evaluated.

Results: In general, the major clinical features that were relevant to the presenting problem were adequately documented, although fever was not mentioned as a presenting complaint in one quarter of the cases. On an average, about five investigations were ordered for every patient on admission. There was no major difference in the number of investigations conducted between children who were more severely ill and the rest of the patients. The majority of the investigations did not yield any useful diagnostic information. Only 38 percent of the children received antipyretics and 53 percent were tepid-sponging during fever, with 23 percent having received tepid-sponging without concurrently receiving antipyretics. No parental education on febrile convolution was recorded in half of the cases.

Conclusion: Excessive unjustified investigations, deficient antipyresis when required and inadequate communication with the family of children with febrile convolution were observed. Awareness of such deficiencies from this audit should lead to regular staff education, monitoring and future audits in order to improve the quality of our clinical care.

Keywords: clinical audit, febrile seizures, fever

INTRODUCTION

Febrile convolution is a common and benign condition, usually without any long-term neurodevelopmental sequelae. Clinical assessment to identify the underlying causes of fever, judicious selection of investigations, effective temperature control and parental education with collaborative input from medical and nursing staff help to determine the overall quality of care for children with this condition. Children with febrile convulsions constitute 5% of the approximately 270 monthly paediatric admissions to Hospital Batu Pahat, a 300-bed district hospital in Johor, Malaysia. The Malaysian National Clinical Practice Guidelines (CPG) on febrile convolution, developed in 2000, have been used as a reference standard to direct clinical care. The guidelines delineate the clinical features, management and prognosis of this condition. Although the recommendations in this CPG are consistent with those made in other available guidelines, a detailed account on the indications for further investigation is lacking.

The American Academy of Paediatrics (AAP) has published a practice guide specifically on the neurodiagnostic evaluation of a child with febrile convolution, which includes blood studies, lumbar puncture and neuroimaging. The guide clearly advocates the selective use of laboratory investigations. For instance, full blood count is recommended for the evaluation of children who are clinically suspected to have bacterial infections, particularly in children younger than two years of age. Serum electrolytes, glucose, calcium and magnesium are not recommended as routine screening tests, except in prolonged seizures with or without the presence of focal features, and in prolonged postictal obtundation. Based on the available evidence, the guide also recommends against the routine use of specific neurological investigations such as electroencephalogram (EEG) in simple or


