

BACKGROUND:

Acute seizures are a common cause of paediatric admissions to hospitals in resource poor countries and a risk factor for neurological and cognitive impairment and epilepsy. We determined the incidence, aetiological factors and the immediate outcome of seizures in a rural malaria endemic area in coastal Kenya.

METHODS:

We recruited all children with and without seizures, aged 0-13 years and admitted to Kilifi District hospital over 2 years from 1st December 2004 to 30th November 2006. Only incident admissions from a defined area were included. Patients with epilepsy were excluded. The population denominator, the number of children in the community on 30th November 2005 (study midpoint), was modelled from a census data.

RESULTS:

Seizures were reported in 900/4,921(18.3%) incident admissions and at least 98 had status epilepticus. The incidence of acute seizures in children 0-13 years was 425 (95%CI 386, 466) per 100,000/year and was 879 (95%CI 795, 968) per 100,000/year in children <5 years. This incidence data may however be an underestimate of the true incidence in the community. Over 80% of the seizures were associated with infections. Neonatal infections (28/43 [65.1%]) and falciparum malaria (476/821 [58.0%]) were the main diseases associated with seizures in neonates and in children six months or older respectively. Falciparum malaria was also the main illness (56/98 [57.1%]) associated with status epilepticus. Other illnesses associated with seizures included pyogenic meningitis, respiratory tract infections and gastroenteritis. Twenty-eight children (3.1%) with seizures died and 11 surviving children (1.3%) had gross neurological deficits on discharge. Status epilepticus, focal seizures, coma, metabolic acidosis, bacteraemia, and pyogenic meningitis were independently associated with mortality; while status epilepticus, hypoxic ischaemic encephalopathy and pyogenic meningitis were independently associated with neurological deficits on discharge.

CONCLUSION:

There is a high incidence of acute seizures in children living in this malaria endemic area of Kenya. The most important causes are diseases that are preventable with available public health programs.