Overall mortality was 2.2% in children after a first unprovoked afebrile seizure

Shinnar S, O'Dell C, Berg AT. Mortality following a first unprovoked seizure in children: a prospective study. *Neurology* 2005;**64**:880–2.

Clinical impact ratings Neurology ★★★★★☆ Paediatrics ★★★★★☆

Q In children with a first unprovoked afebrile seizure, what is the prognosis in terms of overall mortality and sudden unexplained death in epilepsy?

METHODS

Design: inception cohort followed for mean 14 years.

Setting: 3 medical centres in Bronx, New York, USA.

Patients: 407 children who were 1 month to 19 years of age (mean age at first seizure 6.8 y)* with a first unprovoked afebrile seizure. 68 (17%) had initial seizure of remote symptomatic aetiology and 339 (83%) had initial seizure of cryptogenic or idiopathic aetiology.

Prognostic factors: no prognostic factors included.

Outcomes: overall mortality and sudden unexplained death in epilepsy.

*Data reported in *Ann Neurol* 2000;**48**:140–7.

MAIN RESULTS

9 children (2.2%) died. 5 deaths were classified as definitely or probably unrelated to epilepsy. 4 deaths were classified as possible or probable sudden unexplained deaths in epilepsy, with all 4 children having previous seizures and anticonvulsant use at the time of death.

CONCLUSION

In children with a first unprovoked afebrile seizure, 9 children (2.2%) died, 4 of whom had deaths classified as possible or probable sudden unexplained deaths in epilepsy.

For correspondence: Dr S Shinnar, Albert Einstein College of Medicine, Bronx, NY, USA. SShinnar@aol.com

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Commentary

The study by Shinnar *et al* examines whether the decision not to treat a child with a first, unprovoked seizure could increase the risk of mortality via the sudden death in epilepsy syndrome. Until recently, many paediatricians routinely treated a first, non-febrile seizure in children. Between 25 000 and 40 000 children have a first seizure each year in the US.¹ In 2003, the Quality Standards Subcommittee of the American Academy of Neurology reviewed the available literature and concluded that no evidence existed to show that antiepileptic drug (AED) treatment reduced the incidence of long term epilepsy, and therefore the Practice Parameter did not recommend routine AED use.¹

This study by Shinnar *et al* is important in examining the risk of mortality in children who have had a first, unprovoked seizure, with the general practice of no treatment for first seizures. Only 4 of 9 deaths in 407 children with unprovoked seizures were related to recurrent seizures, and all were already receiving AED treatment because of recurrent seizures. Thus, delaying treatment until a second seizure does not seem to increase the risk of sudden death. This study involves the same 407 children reported earlier by the same investigators,² on seizure recurrence. In the earlier report, 46% of the children had a recurrent seizure within 10 years. After a second seizure, 72% had a third seizure, showing that the second seizure is a more valid indicator for a diagnosis of epilepsy and initiation of antiepileptic treatment.

The most important limitation of the study is the small sample size; children with epilepsy have a low mortality rate, and sudden death in epilepsy is a relatively rare occurrence. It is, therefore, questionable whether a sample size of 407 children is a large enough number to reach a definite conclusion on the influence of delay of treatment on the incidence of sudden death. It should reassure clinicians, however, that delay of treatment until after a second seizure in this study did not seem to carry any increased risk.

Howard S Kirshner, MD
Vanderbilt University School of Medicine
Nashville, Tennessee, USA

1 Hirtz D, Berg A, Bettis D, *et al*. Practice parameter: treatment of the child with a first unprovoked seizure: report of the Quality Standards Subcommittee of the American Academy of Neurology and the Practice Committee of the Child Neurology Society. *Neurology* 2003;**60**:166–75

2 Shinnar S, Berg AT, O'Dell C, *et al*. Predictors of multiple seizures in a cohort of children prospectively followed from the time of their first unprovoked seizure. *Ann Neurol* 2000;**48**:140–7.