Abstract

The authors conclude that in order to reduce the recurrence of seizures once medication is withdrawn, more extensive use should be made of magnetic resonance imaging at the time of diagnosis, as this would help to identify symptomatic causes of epilepsy, which could provide important information for the development of future therapies.

Introduction

The literature demonstrated a lack of coherence between studies. Limitations included multiple possible risk factors, data being from different population-based cohort studies rather than randomised clinical trials, and a lack of consistent definitions of clinical variables. This made it harder to assess the significance of certain syndromes, although it is possible that a certain number of studies may have overestimated the recurrence rate due to lack of follow-up periods. Despite this, the data analysis ultimately suggests that certain factors can be identified as important predictors of seizure recurrence following medication withdrawal, so long as definitions are consistent across different studies.

Results

Correlations analysis revealed multiple variables considered to be important in terms of recurrence rates. The findings suggest that certain factors may be more important in certain populations, and that a combination of factors may be required to accurately predict seizure recurrence. These factors include:

- Age at onset
- Antiepileptic drug withdrawal
- Neurological abnormalities / learning difficulties
- Number of seizures before control
- Seizure type
- EEG findings
- Antiepileptic drug withdrawal

Discussion

The literature demonstrated a lack of coherence between studies. Limitations included multiple possible risk factors, data being from different population-based cohort studies rather than randomised clinical trials, and a lack of consistent definitions of clinical variables. This made it harder to assess the significance of certain syndromes, although it is possible that a certain number of studies may have overestimated the recurrence rate due to lack of follow-up periods. Despite this, the data analysis ultimately suggests that certain factors can be identified as important predictors of seizure recurrence following medication withdrawal, so long as definitions are consistent across different studies.

Conclusions

The authors conclude that in order to reduce the recurrence of seizures once medication is withdrawn, more extensive use should be made of magnetic resonance imaging at the time of diagnosis, as this would help to identify symptomatic causes of epilepsy, which could provide important information for the development of future therapies.

Recommendations

- Future studies should attempt to include more variables consistent in all studies to enable variables to be compared across the studies. More attention needs to be paid to what to do if seizures recur.
- More extensive use should be made of magnetic resonance imaging at the time of diagnosis, as this would help to determine symptomatic causes of epilepsy, which could provide important information for the development of future therapies.

Literature Review/Methodology

Medical databases used for the selection of literature included Medline 1950- , Embase 1995- , and CINAHL 1982- all searched on 19th February 2007. Search terms used:

- Outcome & child & epilepsy
- Medication withdrawal & epilepsy
- Aetiology / Seizure type
- Electroencephalogram (EEG) findings
- Neurological Abnormalities / Learning Difficulties
- Number / frequency of seizures before control

Figure 1 - Presentation of recurrence rates between studies analysed

Figure 2 - Chart presenting findings of each study related to the most predictable variables

Table 1 - Indicators of variables that formed most significant:

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Table 2 - Indicators of variables that formed most significant:

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References


Caviedes & Herranz (1998) – children at risk three times greater if initial seizures occurred in less than one month.


Altunbasak et al. (1999) – more than 21 seizures

Gherpelli et al. (1992) – more than 10 seizures

Caviedes & Herranz (1998) – risk three times greater if initial seizures occurred in less than one month.

Altunbasak et al. (1999) – presence of slowing prior to withdrawal

Caviedes & Herranz (1998) – children at risk three times greater if initial seizures occurred in less than one month.

Altunbasak et al. (1999) – generalised tonic clonic associated with other aetiology

Shinnar (1994) – children at risk three times greater if initial seizures occurred in less than one month.

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