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Outcomes in newly diagnosed localization-related epilepsies

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Summary A total of 558 patients with a range of localization-related epilepsy syndromes starting treatment in a single centre were followed over a period of up to 20 years. Overall, 343 (62%) patients became seizure free for 12 months or more (responders), 92% of whom (57% of total population) remained in remission until the end of follow-up. Only 27 (5%) responders relapsed and subsequently developed refractory epilepsy. The remaining 215 (38%) patients never became seizure free for any 12-month period. There were no significant differences in outcome between cryptogenic (56% remission) and symptomatic (57% remission) epilepsies. Patients with underlying cortical atrophy (71% remission; $p < 0.05$) or cerebrovascular disease (70% remission; $p < 0.01$) did better, while those with traumatic brain injury (35% remission; $p < 0.001$) did worse than the remainder of the symptomatic group. Remission rates in patients with cortical dysplasias (60%), hippocampal atrophy (50%) and primary brain tumors (52%) appeared no different from those with other symptomatic epilepsies. Overall, 20—40% patients with each epilepsy syndrome reported no further seizures after starting AED treatment including 21% with hippocampal atrophy and 33% with cortical dysplasia. More than 50% of patients developing localization-related epilepsy during adolescence or in adulthood had a good outcome. Prognosis in those with underlying hippocampal atrophy or cortical dysplasia was not always bad.

Introduction

The natural history of seizure disorders should be taken into consideration in any study of outcome. The key to accurate assessment of prognosis is recruitment of patients at the same point in the course of the disorder.[1] Specialist epilepsy clinics have a higher representation of patients with refractory epilepsy and cross sectional studies in such populations invariably report low rates of seizure freedom. This factor accounts for the perceived poor prognosis of epilepsy in much of the early literature. Longitudinal, population-based studies in patients with new onset epilepsy provide a more reliable assessment of response to treatment.[2—5]

With the widespread use of high resolution brain magnetic resonance imaging it has been possible to identify underlying structural abnormalities in many

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patients with localization-related epilepsy.[6] Our understanding of the prognosis of these symptomatic epilepsies, nonetheless, is largely based on studies carried out in specialist centers. Thus, it is widely believed that certain types of symptomatic epilepsies, such as those associated with hippocampal atrophy and malformations of cortical development, which are frequently encountered in these clinic populations, almost invariably respond poorly to pharmacotherapy.[7–9] However, in most parts of the world epilepsy is treated at its onset by non-specialists. Many patients who respond to antiepileptic drugs (AED) treatment do not undergo brain imaging. It is only when they prove refractory to a range of AEDs that referral to a specialist centre is made and subtle structural abnormalities such as hippocampal atrophy are identified.[10]

Populations of patients with newly diagnosed epilepsy are, therefore, required to assess accurately the response to AED treatment in symptomatic epilepsy syndromes. We carried out an outcomes study in patients with localization-related epilepsies diagnosed, treated and followed up at a single centre over a 20-year period. This study follows up our preliminary observations published in 2000 which was made in a smaller cohort of patients.[4] Nearly twice as many patients have now been followed up over a longer time period. Particular focus in this report has been placed on remission in patients with specific symptomatic epilepsy syndromes

Methods

Adolescent and adult patients with suspected seizure disorders were referred to the first seizure service at the Western Infirmary, Glasgow, Scotland, by general practitioners, accident and emergency physicians and other clinicians over a 20-year period. A structured protocol was used to collect clinical information and detailed histories were obtained from patients and witnesses regarding suspected seizures. Electroencephalography was performed as clinically indicated, and brain imaging was undertaken if localization related epilepsy was suspected. When a diagnosis of epilepsy was made, the first ever AED was prescribed and outcomes were monitored over a period of years. Patients were considered to have responded to treatment if they had no seizures for a minimum of 12 months on an unchanged treatment schedule. Remission was defined as having no further seizures after responding to treatment. Relapse occurred in responders in whom initial control was lost and whose epilepsy subsequently became pharmacoresistant. Patients who continued to report seizures were, by definition, considered to have uncontrolled epilepsy. The extent of control was assessed at the time of the patient's last hospital visit. End of follow up was 1st May 2003, when the last patient had been attending the clinic for 2 years.

Epidemiological data were collected by review of research case notes. Seizure types and syndromes were classified at the time of analysis according to the guidelines of the International League against Epilepsy.[11,12] Data were collected on an electronic spreadsheet and analysed using Minitab for Windows (version 13.32). Patients who did not return for follow up or were persistently non-adherent to their prescribed medication were excluded from analysis. The χ^2 test was used to analyse categorical data and the Bonferroni method was used to correct for multiple comparisons. The Mann–Whitney test was used for analysis of non-parametric continuous data.

Results

Between August 1981 and May 2001, 890 patients were diagnosed with epilepsy, all of whom were prescribed AED treatment. A total of 625 (70%) patients were classified as having localization-related epilepsy. Sixty-seven patients (11%) were excluded from analysis owing to insufficient fol-

Table 1 Treatment outcomes in patients with newly diagnosed localization-related epilepsies.

	All localization related epilepsies		Cryptogenic epilepsies[a]		Symptomatic epilepsies	
Response	343	62%	195	62%	148	61%
Remission	316	57%	179	57%	137	56%
Relapse	27	5%	16	5%	11	5%
Uncontrolled	215	38%	119	38%	96	39%
Total	558	100%	314	100%	244	100%

Response, seizure-free for at least 12 months; remission, control maintained until the end of follow-up; relapse, refractory epilepsy after initial response; uncontrolled, never free of seizures for any 12 months.

[a] Idiopathic localization-related epilepsies were included with cryptogenic group for analysis of outcomes.