

The outcome of initiation of antiepileptic drug monotherapy in primary care: a UK database survey

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SUMMARY

We describe the incidence of newly treated epilepsy in primary care and patterns of antiepileptic drug prescription, numbers of patients who remain on initial therapy and health service utilisation. Data was collected from 100 general practices that subscribed to the Doctors Independent Network (DIN-LINK) project. Over the study period 1531 patients were identified, equating to an annual incidence rate of 36.3 per 100 000 (95% confidence interval [CI] = 32.1 to 40.8). Of these patients, 1465 (95.7%) were started on antiepileptic drugs. Overall, 1154 (78.8%) patients remained on the original monotherapy at the 12-month stage. Primary care consultations, secondary care referrals and emergency admissions were all increased for those whose treatment was changed either to polytherapy or an alternative monotherapy.

Keywords: antiepileptic agents; data collection; drug therapy; epilepsy.

Introduction

ALTHOUGH most patients with epilepsy will be referred to a specialist in the short term, continued management for the majority of patients is within primary care.¹ This has become an established and recommended pathway for epilepsy care.² Despite this, the majority of general practitioners (GPs) feel unfamiliar with antiepileptic drugs, and over a third lack confidence in their knowledge of epilepsy.³ There is a need to explore patterns and outcomes of new therapy for patients with epilepsy to assess drug efficacy and organise service priorities. In this article we examine patterns of prescription in primary care to ascertain outcome in terms of continuation of initial therapy and impact upon both primary and secondary care use.

Method

Data was collected from the Doctors Independent Network (DIN-LINK) using the Torex Health practice software. DIN-LINK collects data from 100 practices and records of 755 193 patients. Practices are stratified by age, social deprivation indices and other socioeconomic factors, so that the data are representative of the United Kingdom (UK). Access to the dataset was through an unrestricted grant from Sanofi-Synthelabo UK.

Data were collected on patients who were prescribed one of the following drugs: sodium valproate, carbamazepine, lamotrigine, or phenytoin. These patients also had to meet the following criteria:

- have a diagnosis of epilepsy using the Read Code classification on or before the date of the first prescription,
- have no previous use of antiepileptic medication in the 6 months prior to prescription,
- be registered at the same practice at the end of the 12-month period, and
- the drug must have been prescribed for the treatment of epilepsy.

Patients who were initiated on polytherapy or who were given a new diagnosis within 3 months of a hospital referral were excluded. Data was collected for patients who met the above criteria and who were identified between 1 January 1995 and 1 August 2000. Ethical approval was not sought for this anonymised dataset study. Annual incidence was extrapolated from all cases over the period.

Results

Incidence

A total of 1531 patients were identified as having epilepsy

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HOW THIS FITS IN

What do we know?

Most patients with epilepsy receive the majority of their care within the primary care setting. Many general practitioners feel they are unfamiliar with antiepileptic medication.

What does this paper add?

Most patients with epilepsy are maintained on first choice monotherapy. The type of antiepileptic medication affects the likelihood of remaining on first choice monotherapy. Those patients who change medication are likely to utilise greater health service resources.

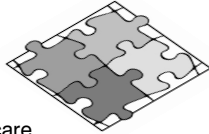


Figure 1. Incidence of newly treated epilepsy.

and prescribed antiepileptic treatment for the first time; an annual incidence of 36.3 per 100 000 (95% confidence interval [CI] = 32.1 to 40.8). The incidence of newly treated epilepsy by age and sex is shown in Figure 1.

Antiepileptic drug prescription

Overall, 1465 patients (95.7%) were prescribed one of the reference products as monotherapy: 545 (37.2%) were prescribed carbamazepine, 80 (5.5%) lamotrigine, 225 (15.4%) phenytoin, and 615 (42.0%) sodium valproate. This is presented in Table 1. There were no significant differences in prescription by sex with the exception of lamotrigine. Females (57, 7.9%) were significantly more likely to be prescribed lamotrigine than males (23, 3.1%) ($P < 0.001$).

Continuation on initial therapy

After 12 months, 1154 (78.8%) patients remained solely on the original monotherapy; 96 (6.6%) continued on their original medication with the addition of another drug as polytherapy; 151 (10.3%) had their original monotherapy stopped and replaced with another drug; and 64 patients (4.4%) discontinued medication completely. Sodium valproate was the most frequently continued, in 504 (82.0%) of patients, which was significantly greater than for the second most prescribed drug, carbamazepine (412, 75.6%) ($P < 0.01$).

Continuation increased with age, with 70.6% of those under 5 years of age continuing on the first choice monotherapy compared with 84.2% of those aged 75 years and over. There was a significant difference

between sodium valproate (87.4%) and carbamazepine (75.4%) in those groups of patients older than 65 years of age ($P < 0.05$).

Change of initial diagnosis

As mentioned above, 64 (4.4%) patients had treatment withdrawn. A review of all records for these patients revealed that all were initially misdiagnosed with epilepsy.

Resource use

GP consultations. Data concerning consultations were available for 1455 (99.3%) patients. The mean number of consultations per patient was 13.3 per annum, with 99.3% of patients having at least one consultation. Mean consultations increased for those prescribed an additional antiepileptic drug (18.9) and those who were switched to an alternate monotherapy (17.4). For those solely on the original antiepileptic drug, mean consultations numbered 12.3, and for those who discontinued medication altogether, mean consultations numbered 13.6.

Consultant referrals following treatment initiation. Of the 1465 patients, 139 (9.5%) were referred to a consultant physician following treatment initiation. For those who remained solely on the original therapy, 7.6% of patients were referred. This increased for those prescribed an additional drug (15.6%) and those on a different monotherapy (16.6%). Of those whose medication was discontinued, 17.2% were referred.

Table 1. 12-month outcome of initial antiepileptic drug prescription by drug type

Drug	Number of patients at 12 months	Number (%) of patients continued on original therapy	Number (%) of patients continued on original therapy with add-on treatment	Number (%) of patients switched to a different drug(s)	Number (%) of patients who discontinued medication
Carbamazepine	545	412 (75.6)	33 (6.1)	73 (13.4)	27 (5.0)
Sodium valproate	615	504 (82.0)	48 (7.8)	38 (6.2)	25 (4.1)
Lamotrigine	80	61 (76.3)	7 (8.8)	11 (13.8)	1 (1.3)
Phenytoin	225	177 (78.7)	8 (3.6)	29 (12.9)	11 (4.9)
All products	1465	1154 (78.8)	96 (6.6)	151 (10.3)	64 (4.4)

Emergency admissions. Emergency admissions were highest for patients prescribed an additional drug (20.8 per 1000). For those placed on a different drug as monotherapy the rate was 13.25 per 1000, and for those remaining on the original monotherapy the rate was 12.13 per 1000. There were no emergency admissions for patients who were withdrawn from treatment altogether.

Discussion

This article demonstrates that within a primary care sample, nearly 80% of patients with epilepsy placed on monotherapy are maintained on the first choice medication after 12 months. Overall, sodium valproate had the highest continuation rate at 82.0%. However, prescription of sodium valproate was associated with age, which also affected continuation.

The proportion of patients whose diagnosis was changed following initial prescription (4.4%) compares with previous studies with a misdiagnosis rate of 26.1%.⁴ However, in this study we are viewing diagnosis change following new prescription, and therefore new consultant assessment, and this figure reflects the recent consultant assessment.

There is a pattern of increased activity in terms of primary care, consultant referrals, and emergency admissions for patients who are not maintained on the original monotherapy, but who switch to either an alternate drug or polytherapy. Previous studies have indicated that hospital care represents the greatest direct cost for people with epilepsy and that this is disproportionately attributable to poor seizure control.⁵

A large part of the pathway of epilepsy care exists in primary care; this study highlights how individual drugs may have an impact on patient continuation, and how this will impact on resource utilisation.

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