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Antiepileptic drug use and epileptic seizures in elderly nursing home residents: A survey in the province of Pavia, Northern Italy☆

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Abstract

Some surveys indicate that elderly nursing home residents are extensively prescribed antiepileptic drugs (AEDs). Few studies have evaluated the prevalence of seizure-related diagnoses as a risk factor for AED administration in nursing homes. To assess the prevalence of AED use and of epileptic seizures in the elderly nursing home residents in our country, we considered age and gender data, functional status (measured by the Barthel's Index), drugs currently administered on a scheduled basis, clinical diagnoses from the patient's chart including possible history of epileptic seizures, of all subjects aged 60 years and over living in 21 federated nursing homes in the province of Pavia, Northern Italy. Data relating to 2.001 subjects (77.5 % females) were collected over a 4-month period (September–December 2000).

Eighty-seven of the 2.001 residents (4.3%; 5.3% of all the males and 4.0% of all the females) were taking AEDs and 58 (3.5% of all the males and 2.7% of all the females), all of them under treatment with at least one AED, had epileptic seizures in their history. Both these subgroups had a mean modified Barthel's Index score significantly lower than that of the population as a whole.

Phenobarbitone was the most frequently prescribed AED, and the penetration of newer AEDs was minimal. Subjects in early old age (60–74 years) were more likely than older subjects to take an AED. Logistic regression indicated a significant association between seizures reports, a younger age and a history of cerebrovascular events, alcohol abuse and meningiomas.

The prevalence of AED use in this study was lower than that found by previous U.S. studies: nevertheless, our data confirm male gender and early old age as factors associated with AED taking in elderly nursing home residents. In our series AED users

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showed a lower level of autonomy. Taken together, our data suggest that an earlier institutionalization of seizure subjects could be facilitated by the clustering of various conditions, such as seizures, cerebrovascular events, other clinical disorders and a possibly inappropriate anticonvulsant treatment.

Keywords: Elderly; Anticonvulsants; Epilepsy; Nursing home; Comorbidity

1. Introduction

Community-based studies have reported a high incidence and prevalence of epileptic seizures in the elderly (Hauser et al., 1991, 1993; Sander et al., 1990; Wallace et al., 1998).

Compared with the general elderly population, elderly nursing home residents are presumably frailer and more frequently in need of co-medication for associated conditions. Thus, risks related to the use, by the elderly, of antiepileptic drugs (AEDs) could be increased in these settings (Field et al., 2001).

Surveys of elderly nursing home residents in the United States of America (U.S.) have revealed a 10% point prevalence of AED use, and also age- and gender-related differences in AED taking in this population (Cloyd et al., 1994; Lackner et al., 1998; Schachter et al., 1998; Garrard et al., 2003).

However, the prevalence of AED use in nursing homes is not an accurate reflection of the prevalence of epilepsy in these settings, given that these drugs are also prescribed for a variety of disorders other than epileptic seizures (Schachter et al., 1998; Garrard et al., 2003).

Although it has been reported that the presence of a specific indication for the use of antiepileptic medication (i.e., epilepsy/seizures) is a factor significantly associated with AED administration in nursing homes (Garrard et al., 2000, 2003), definite diagnostic classification of patients' seizures was often unavailable (Schachter et al., 1998). Furthermore, neurologists were rarely involved in the diagnostic and therapeutic process, and the clinical information needed to assess the accuracy of the diagnosis was generally lacking (Schachter et al., 1998).

This study aimed to assess the prevalence of AED use and to describe the demographic, clinical and functional characteristics of AED users among a population of elderly, nursing home residents in the province of Pavia, Northern Italy.

2. Methods

2.1. Data collection

Twenty-one federated nursing homes in the province of Pavia (median size 79 beds; range 40–254) were consecutively visited over a 4-month period (September–December 2000).

All these institutions provided an individual patient's chart for each resident, which detailed diagnoses at admission and recorded consecutively the patient's follow-up.

Barthel Scale was periodically revised by the institution to control the functional state of each resident for reimbursement purposes.

Investigators personally reviewed the individual charts of all residents aged ≥60 years, for the collection of:

- age and gender data;
- all drugs currently prescribed on a scheduled basis, reported by registered name;
- all clinical diagnoses reported in the patient's chart at the time of observation;
- presence of epileptic seizures in the case history;
- functional status, measured using the Barthel Index.

Informed consent was preliminarily obtained from each subject or, when necessary, from his/her legal guardian.

The data relating to each subject were entered into a computerized data collection form (previously revised and approved by the Ethics Committee of the C. Mondino Institute of Neurology) that concealed the identity of the individual concerned.

2.2. Data analysis

For the analysis, the registered name of each drug and clinical diagnoses were converted into their corre-