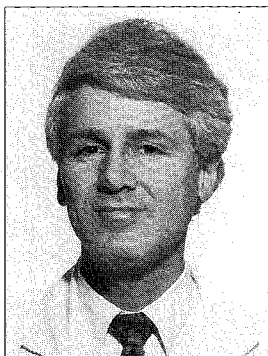


Medical Management of Epilepsy: Issues and Implications

Ronald P. Lesser, MD; and Gershon Ney, MD



Ronald P. Lesser, MD

Professor of Neurology and Neurosurgery
Johns Hopkins University
School of Medicine
Director, Johns Hopkins Epilepsy Center
Baltimore, Maryland



Gershon Ney, MD

Assistant Professor of Neurology
Albert Einstein School of Medicine
Director, Epilepsy Clinic
Long Island Jewish Medical Center
New Hyde Park, New York

This Special Report supplement to *The American Journal of Managed Care* explores the clinical, psychosocial, and economic aspects of epilepsy and its medical management.

Participants in the roundtable discussion highlighted in this Special Report were chosen for their diverse backgrounds and areas of expertise in managing epilepsy. Representing the fields of managed care, neurology, pediatric neurology, neurosurgery, pediatrics, epidemiology, clinical psychology, pharmacy and pharmacology, and pharmacoeconomics, the participants addressed important issues in the cost-effective-

ness of the diagnosis and treatment of epilepsy, including its demographics and costs, selection of an antiepileptic drug, the care of children with epilepsy, the role of referral centers and specialized care, and the effect of vagal nerve stimulation. Although medical management was the major focus of the roundtable, issues relating to surgical management were addressed as well.

Demographics and Costs

Epilepsy differs from most chronic diseases in several respects. Its onset can occur at any age, although the peak incidences are in the first decade of life and

in the elderly. The prevalence of epilepsy, at less than 1%, is relatively low.¹ Epilepsy affects about 2 million people in the United States, roughly 17% of whom are children and adolescents aged 17 years and younger.¹

The cumulative incidence, or the risk of ever having it, is about 3%.² The prevalence of epilepsy is so much lower than the cumulative incidence because although it is a chronic disease, epilepsy is not always a lifelong disease or one with a predictable course. The majority of patients with epilepsy are able to achieve remission; that is, their seizures stop after treatment with antiepileptic drugs (AEDs), and many go on to discontinue AEDs successfully.

The direct costs of epilepsy in 1991 US dollars (ie, medical treatment, residential care, vocational rehabilitation, special education, and research) were estimated to be \$1.8 billion, and the indirect costs (ie, excess unemployment, underemployment, and excess mortality) were estimated at \$8.5 billion.¹ If only the 150,000 new cases diagnosed in the United States each year are considered, the direct costs are \$1 billion and the total costs are \$3 billion.¹

Pharmacologic Treatment

Therapy with AEDs remains the cornerstone of epilepsy management. From 1912, when phenobarbital was introduced, until 1978, when valproic acid was approved for use, no new AEDs were introduced for 15 years. Since 1993, these AEDs have been joined by five more, with an additional two expected to receive FDA approval in 1998.

The goal of AED treatment is to free the patient from seizures. However, the accepted criterion for efficacy in trials that evaluate the newer AEDs is usually a 50% reduction in seizure frequency, but for many patients (and physicians), a 50% reduction is not good enough.

Achieving freedom from seizures, or even adequate seizure control, is a challenge that involves a careful choice of agent based on seizure classification and side effects as well as ongoing evaluation

for efficacy, optimal dosing, the need for additional therapy, and the impact of therapy on the patient's quality of life. The costs and cost-effectiveness of AEDs are also major concerns.

Managing Epilepsy in Children

Treating children with epilepsy is different from treating adults with epilepsy. Even if the seizure type is the same and the same AED is indicated, the drug pharmacokinetics, adverse effects, and dosing schedules and formulations are different in children. In addition, trials, many of which evaluate the safety and efficacy of AEDs, are done in adults. There are also numerous issues regarding physical and mental development, schooling, and social adjustment that are not aspects of adult-onset epilepsy.

Specialized Care

Another factor that influences the quality, costs, and cost-effectiveness of epilepsy treatment is the management of intractable epilepsy. Referral centers that provide specialized care, procedures, and consultative services to establish or confirm the diagnosis of

ACRONYM LIST

The following acronyms are found in the pages of this Special Report.

AED	antiepileptic drug
CT	computed tomography
EEG	electroencephalogram
FDA	Food and Drug Administration
HMO	health maintenance organization
ICE	International Classification of Epilepsies
MCER	marginal cost-effectiveness ratio
MRI	magnetic resonance imaging
PET	positron emission tomography
SPECT	single photon emission tomography

epilepsy, initiate appropriate treatment, and monitor ongoing treatment appear to be the most logical alternative.

Implications for Medical Care in General

Although the prevalence of epilepsy is considerably lower than that of other chronic diseases such as diabetes and hypertension, it nonetheless presents the same set of issues associated with chronic disease and deserves the attention of physicians and managed care organizations with regard to diagnosis, treatment options, treatment outcomes, developmental and quality-of-life issues, and costs.

However, because of its low prevalence, epilepsy can be considered a microcosm of healthcare in general. The lessons that can be learned from studying the nature of epilepsy and its ideal

treatment might be applied to other chronic diseases and translate into better treatment and medical care in general.

Managed care organizations are in an excellent position to spearhead a move in this direction by working with experts at specialized epilepsy centers to design the best treatments and the most cost-effective practice guidelines.

... REFERENCES ...

1. Begley CE, Annegers JF, Lairson DR, Reynolds TF, Hauser WA. Cost of epilepsy in the United States: A model based on incidence and prognosis. *Epilepsia* 1994;35:1230-1243.
2. Hauser WA, Hesdorffer DC. *Epilepsy: Frequency, Causes and Consequences*. New York: Demos; 1990:18.