

LETTERS

The Role of Clinical Pharmacists in an Epilepsy Clinic

TO THE EDITOR: We wish to report our experience with the role of clinical pharmacists in an epilepsy clinic. As our experience was very positive, we decided to share it in order that this model clinic might provide an operational framework for other specialty clinics where drug management and patient education are of paramount importance. For example, endocrine, hypertension, anticoagulation and headache clinics may well find clinical pharmacists a valuable addition to a health care delivery team. Such individuals have been successful in monitoring drug levels in methadone,^{1,4} diabetes,^{5,6} hypertension^{7,8} and anticoagulation clinics.⁹

In the Bexar County Hospital District are over 2000 adult patients with epilepsy who receive their primary care from medical professional staff of the University of Texas Health Science Center at San Antonio. These patients are evaluated at a weekly epilepsy clinic in a local county hospital clinic setting. The organization and staffing of our clinic is indicated (Figure 1). Because of the heterogenous nature of our patient population and the large number of patients requiring careful

outpatient medical care, we decided initially to include predoctoral clinical pharmacy students (Pharm.D.) in our clinic. Over the past two years, these students have participated in a number of areas and have a wide spectrum of supervised responsibilities (Table 1).

Not only do the Pharm.D. students participate in health care delivery, but they have also become involved in accomplishing various clinical research projects, in publishing a professional epilepsy newsletter for the Health Science Center house staff and local physicians in private practice, and have initiated several projects designed to facilitate treating patients with seizures.

During the two-year period the clinic has been fully operational, several important trends have become apparent. Firstly, the compliance rate has significantly increased with a concomitant decrement in the seizure frequency rate. This has resulted in blood anticonvulsant levels that reach therapeutic ranges in the majority of patients. We attribute a substantial amount of the success of our clinic to the direct interaction of Pharm.D. students with patients, through education, medical management and individual counseling. The degree to which they have improved the clinic is impossible to exactly determine, but it is significant that they bring additional skills besides increasing the number of staff that see the patients.

Usually, within a month of their initial exposure to clinical epileptology, the Pharm.D. student is able to assess the clinical status and generate a solid thera-

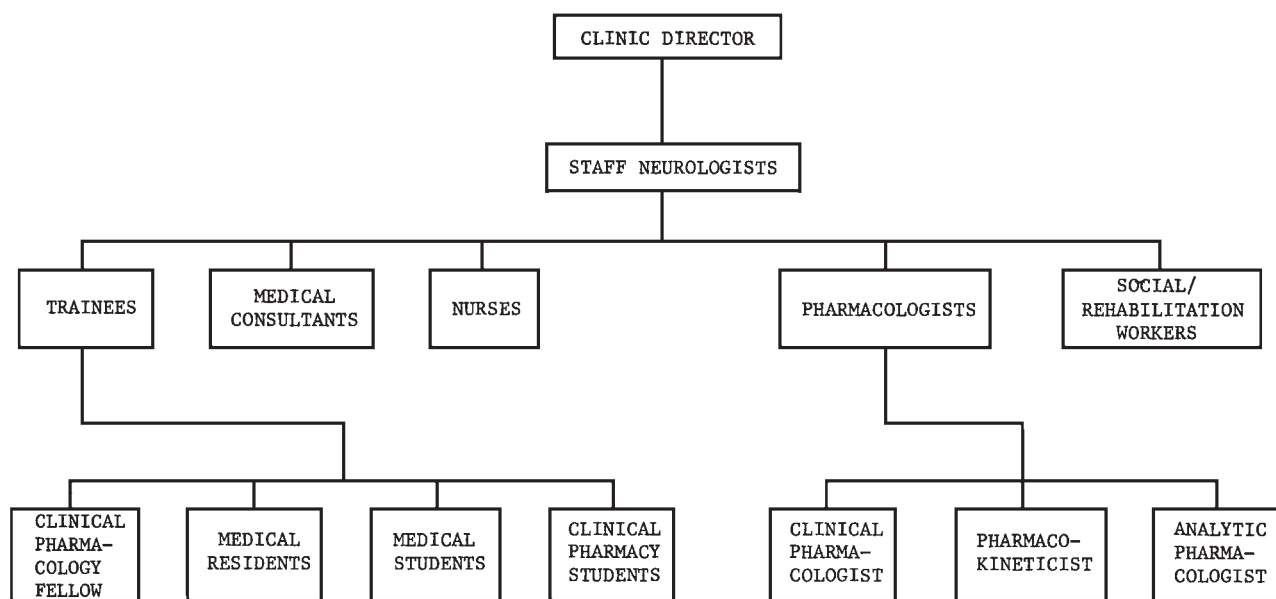


Figure 1. The general organization of the Outpatient Epilepsy Clinic. Clinical pharmacists, medical students and medicine residents routinely see patients under the supervision of staff neurologists. Clinical pharmacologists, a pharmacokineticist and

analytic pharmacologists are available for consultation. In addition to managing patients, the clinical pharmacist also serves as a consult to medical students and medicine residents, resulting in optimal patient benefits.

peutic program in the majority of cases. Each patient evaluated is presented to a staff neurologist and the case discussed with a pharmacokineticist. The patient is also evaluated by the staff neurologist, providing a means of assessing the Pharm.D. student's program, and teaching contemporary concepts in epilepsy. Not infrequently, the type of pharmacokinetic technique the Pharm.D. student used to determine the patient's correct dosage is not known to the physician. This results in a good interaction with a resulting cross-fertilization of ideas.

We have found that the overall quality of health care is improved considerably by their presence in our clinic, and they have contributed vastly to a better understanding of ways through which patients with epilepsy can be managed. It is in this area of specialized training and skills that clinical pharmacy appears to have reached a zenith as an important member of a health care delivery team. As our experience increases, we also feel that clinical pharmacists will be able to contribute significantly to a general neurology service, being responsible for monitoring various types of medication and for therapeutic problems such as myasthenia gravis, anticoagulation therapy and antithrombotic therapy for cerebral vascular insufficiency, as well as status epilepticus and other general medical problems requiring medical management. As this is, to our knowledge, the first report on the incorporation of clinical pharmacists into a neurology specialty area, and because our experience was so favorable, we felt that it should be communicated in order that the overall quality of medical care be ultimately improved.

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Table 1. Responsibilities of Clinical Pharmacy Students in the Outpatient Setting

1. **Evaluation of patients regarding:**
 - a. determination of compliance
 - b. signs of drug intoxication or untoward effects
 - c. seizure frequency and type
 - d. evidence of drug interaction
2. **Determination of optimal anticonvulsant dosages using:**
 - a. modern pharmacokinetic techniques
 - b. correlation of drug levels with clinical signs of drug effect
3. **Monitoring of blood anticonvulsant levels for:**
 - a. compliance
 - b. accumulation of medication possibly leading to intoxication
4. **Education of patients in the following areas:**
 - a. importance of compliance
 - b. beneficial and side effects of medication
 - c. causes of seizures and various treatment programs for patients with epilepsy
5. **Encouraging and assisting patients to enter rehabilitational, educational or vocational programs**
6. **Liaison with various health care teams when patients are hospitalized for continued follow-up of the therapeutic regimen**