LETTERS TO THE EDITOR

Comparison of the handling of neurological outpatient referrals by general physicians and a neurologist

Physicians in the United Kingdom see many patients with neurological disease both as outpatients, and as inpatients where about 20% of admissions to general medical wards may be neurological.[1] The process by which general practitioners (GPs) refer patients with neurological symptoms to hospital for a specialist opinion is not uniform throughout the UK. In some areas GPs may refer directly to the neurologist but in others there is no such open access and patients must first be referred to a local physician who may or may not refer the patient to a neurologist. This method of practice occurs frequently in the UK and Ireland because there are fewer neurologists per head of population than in most other countries of Western Europe. These two methods of patient management have never been compared. It is difficult to measure the effectiveness of an outpatient consultation, but efficiency and the use of resources are easy to measure. This is the subject of the following study.

Altnagelvin Hospital in Londonderry and Tyrone County Hospital (TCH) in Omagh are the District General Hospitals for two adjacent populations within the area of the Western Health and Social Services Board for Northern Ireland. Londonderry had four consultant general physicians and two neurological sessions per month which were closed to GPs. Omagh had two consultant general physicians, and two consultant neurologist sessions per month which were open to GPs.

Between 1 November 1987 and 31 May 1988 all patients with neurological symptoms seen by physicians in Londonderry were identified after scrutiny of all referral letters by one of the authors (TE). During this time, all patients seen in the neurology clinic in Omagh were identified. After each patient was seen a specially designed form was completed (by TE in Londonderry and by VP in Omagh); this included information on symptoms, diagnosis, investigations, referrals, drugs prescribed or stopped and whether the patient was to be followed up, admitted or discharged. Twelve months after the first clinic visit, the medical records of each patient were obtained and the above information was updated.

During the six month period a total of 104 patients with neurological symptoms were referred by GPs to physicians in Londonderry and 39 to the neurologist in Omagh (to whom a further 36 patients were referred by other consultants). The groups were remarkably similar in easily measurable features (table). Referral patterns were long-established at each hospital. In Londonderry there was no convenient alternative destination for patients with neurological symptoms. In Omagh there was an alternative, namely the local physicians; although the exact number referred to them during this period is not known, there was little discrepancy in the referral rates per 1000 population—0·74 to the physicians in Londonderry, and 0·70 to the neurologist in Omagh. The mean interval between the referral letter being sent and the patient being seen was 14 weeks for the physicians, and 10 weeks for the neurologist.

Twenty one different diagnoses were made by the physicians and 20 by the neurologist. Tension headache was the commonest diagnosis accounting for 21% in both groups. Diagnoses after the first visit were divided into four categories: epilepsy, structural disease, (such as, transient ischaemic attacks, multiple sclerosis, myelopathy), non-structural disease, (such as, tension headaches, migraine, hysteria, faints), and uncertain/not made. The notable difference between the two groups is the number of uncertain diagnoses in the physicians' group.

The age range of the patients was remarkably similar although there was an excess of males seen by the neurologist. The presenting symptoms were similar, headache and blackout combined accounting for 53% in the physicians' group, and 64% in the neurologist's group. The proportions in each of the four diagnostic groups at one year were remarkably similar. More than 90% of patients were seen by a consultant in both hospitals.

The management of patients showed marked differences between the groups. The neurologist discharged more patients, had fewer uncertain diagnoses, caused fewer admission days, instituted fewer investigations, prescribed fewer drugs, and arranged fewer paramedical and consultant referrals. These outcomes suggest more efficient management by the neurologist. This of course is a relatively small study from a single area and it may be important to establish similar findings from elsewhere.

If these differences in managing neurological outpatients were found elsewhere in the British Isles, there are a number of ways whereby the situation might be improved. GPs might refer fewer patients with neurological symptoms to hospital and physicians might be encouraged to perform fewer investigations, discharge more patients at the first visit, prescribe fewer drugs, and shorten hospital admissions. All this may be possible but is unlikely to occur unless the neurological training which non-neurologists receive is increased. All neurologists might run open clinics. This is not done at present for two reasons: first, many neurologists prefer closed clinics because they then do not have to see as many patients with non-structural disease, and second, and more importantly, there are quite simply not enough neurologists.

In the United Kingdom there is one full time neurologist for every 370 000 population[2]; this compares unfavourably with most other European countries, and the USA has ten times as many neurologists per unit of population.[3] The recommendations of the Association of British Neurologists of one neurologist per 200 000 population[2] would require a doubling of present neurologist numbers. This solution might be more achievable than reforming the neurological practice of GPs and physicians. If neurologists do provide more efficient management of GP referrals than physicians, then increasing the number of neurologists should be self-funding.

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1 Morrow JI, Patterson VH. The neurological practice of a district general hospital. *J Neurol Neurosurg Psychiatry* 1987;50: 1397–1401.
2 *Neurology services in the United Kingdom.* London: The Association of British Neurologists, 1990.
3 Hopkins A, Menken M, De Friese G. A record of patient encounters in neurological practice in the United Kingdom. *J Neurol Neurosurg Psychiatry* 1989;52:436–38.

Table Comparison of patients seen by physicians and neurologist

	Physician's group n = 104	*Neurologist's group n = 39*
Referral rate	0·74	0·70
Sex M/F	52/52	23/16
Mean age (SD)	35·3 (16·6)	34·5 (15·0)
Symptoms		
Headache	30%	38%
Blackout	23%	26%
Dizziness	10%	8%
Other	37%	28%
Diagnoses at 1 year		
Epilepsy	15%	10%
Structural	20%	21%
Non-structural	45%	61%
Uncertain	20%	8%
Discharged at 1st visit	37%	64%
Mean investigations/patient	3·80	0·67
Referred to other consultant	26%	5%
Admission rate (days/pt seen)	0·7	0·1
Drug balance/patient	+ 0·38	−0·02
Follow up visits/patient	0·94	0·62

Aseptic meningitis as complication of intravenous immunoglobulin therapy for myasthenia gravis

In 1991 Waston *et al*[1] described two cases of aseptic meningitis associated with intravenous immunoglobulin (IVIg) therapy in two patients with immune thrombocytopenic purpura (ITP). In both cases there was temporal correlation between the treatment and the outburst of the meningitis but no challenge was performed. Two other cases of recurrent meningitis associated with IVIg was reported in children with ITP.[2,3] We report a patient suffering from myasthenia gravis (MG) who developed aseptic meningitis after IVIg therapy and relapsed after challenge.