

Regular Review

Treating stroke: home or hospital?

GRAHAM MULLEY, T ARIE

A family doctor with an average list will see five or six new victims of stroke each year.¹ How is he to decide whether to treat the patient at home or refer him to hospital? The World Health Organisation² has stated that stroke is a medical emergency which requires accurate diagnosis and optimum care and that this can best be given in hospital. The United States Department of Health's guidelines for stroke care³ argue that, though in the past home care might have been considered for some patients, at present "such management is decidedly inadequate for most stroke patients, particularly for those with acute stroke of less than 48 hours' duration, whether initially mild or severe." A recent study⁴ in which patients with cerebrovascular disease were investigated with a computerised axial tomographic (CAT) scan found that nine out of 60 patients with completed stroke had unsuspected intracranial tumours, and the authors suggested that all patients with symptoms of cerebrovascular disease should have a CAT scan to confirm the diagnosis.

In practice, things are very different. Brocklehurst⁵ found that in a survey of 135 patients, a quarter of whom were under 65 years of age, only 40% were admitted to hospital on the day of the stroke; a similarly low proportion of hemiplegic patients are admitted acutely in Bristol⁶ and South Wales.⁷

The decision whether or not to admit a patient with stroke to hospital is influenced by social factors, the desires of the patient and family, and the gravity of the stroke.⁸ Social factors are the most important consideration⁵: admission is essential if the patient lives alone or if relatives cannot cope, and older patients and those from lower social groups are more likely to be referred to hospital. In contrast, there is little general agreement on the medical indications for hospital admission: though patients with impaired consciousness, poor gait, dysphasia, or incontinence tend to be admitted, many severely disabled patients remain at home.⁹ In part this may be because the general practitioner may have difficulty in obtaining an emergency bed,⁹ and in part because even when the patient has been admitted there is often no apparent resultant benefit.¹⁰

What are the practical advantages of hospital admission? Firstly, admission makes it easier for the clinician to consider and exclude those uncommon conditions which mimic or cause stroke but in which specific treatment may be highly effective. He should be alert to the possibility of meningitis (one of the few indications for doing a lumbar puncture in patients with apparent cerebrovascular disease); subdural haematoma (which is still often missed,¹¹ and should always be suspected in patients with a history of head injury or headache, focal signs, relative mildness of hemiparesis compared with impairment of conscious level, and progressive decline or fluctuation of conscious level); hypoglycaemia (especially in

patients treated with insulin¹² and elderly diabetics taking chlorpropamide); the inflammatory arteritides¹³; and syphilis.

Secondly, investigation with a CAT scanner can differentiate cerebral haemorrhage from occlusive stroke and cerebrovascular disease from tumour. A recent study by Weisberg and Nice⁴ found that tumour was responsible for completed stroke in 15% of patients who were clinically diagnosed as having cerebrovascular disease. The authors concede that some preselection of cases may have occurred, and only 14% of the patients studied were aged 65 or over. Another study of patients with stroke admitted to a geriatric unit¹⁴ has shown that only four of over 1000 investigated by CAT scan had a brain tumour. Nevertheless, even if every patient with stroke had a CAT scan, how often would this materially alter the clinical outcome? We do not know which patients with a tumour who present with pseudostroke would be considered for surgical intervention, or in how many operation would improve the quality of life in the long term.

Hippocrates¹⁵ observed that "it is impossible to remove a strong attack of apoplexy, and not easy to remove a weak attack" and sadly we still cannot offer any effective specific treatment for acute stroke. In these circumstances it is hardly surprising that acute stroke units are no more effective than general wards in reducing the overall mortality rate,¹⁶ though they do reduce the incidence of complications.¹⁷ The acute stroke unit may, however, play an important part in research and in the training of staff who care for patients with stroke in a way analogous to coronary care units.¹⁸ Though research into the acute management of stroke should clearly continue, there may prove to be no effective treatment.¹⁰

In the rehabilitation of stroke the physician should use the full range of health professionals to give the patient every chance of making the most of any residual capacity, and to help the family cope with the often catastrophic social and financial effects of stroke. Unfortunately, once the acute phase is over, many doctors tend to lose interest,¹⁹ and most patients receive very little if any long-term rehabilitation.²⁰ Whether physiotherapy actually accelerates the restoration of postural control, prevents spasticity, or improves limb function remains to be determined, and speech therapy also needs to be evaluated. Nevertheless, experience in centres which have an enthusiastic multidisciplinary stroke team suggests that good results can be achieved.²¹ Stroke rehabilitation units, however, make great demands on the health service in both money and staff, and until the effectiveness of these units has been assessed objectively we shall not know whether they offer good value for money.

What outcome can be expected as a result of hospital care? Unfortunately very few studies have carefully assessed stroke survival and disability. The Framingham study²² showed that

84% of the survivors of stroke were living at home, 70% were independent in daily living activities, and 30% were back to normal activity. We do not know the relative effectiveness of different types of hospital care in modifying residual disability or whether home-based management could be equally effective.

If we have few facts to guide us on the best management of patients with stroke in hospital, we have even less information about home care. Patients with transient or minor strokes do not need admission to hospital, but outpatient assessment is necessary to exclude underlying conditions which may be effectively treated, such as cardiac dysrhythmia, hypertension, carotid stenosis, and polycythaemia, so that the chances of subsequent major stroke can be reduced. At the other extreme, patients who are deeply unconscious with a dense hemiplegia or conjugate gaze paralysis or both have a gloomy prognosis,²³ and the family should be given the opportunity of deciding whether or not they wish to give terminal care at home. The management of the remainder of the patients with a completed stroke in whom home support is good will depend largely on the facilities locally available to the family doctor. Ideally, a physician with an interest in stroke should visit the patient and advise on management. This will be a choice between transporting the patient to a day hospital, a rehabilitation centre, or outpatient physiotherapy several days a week or providing domiciliary care, which is expensive in time, money, and personnel.²⁴ Though day hospitals might achieve good results, the patient may have a long wait for the ambulance and then be subjected to a long, tiring journey. He may believe that these factors outweigh any possible therapeutic benefits.

Theoretically, the general practitioner should get help in

home care from a district nurse, a physiotherapist (whose help in teaching the family about exercises and lifting is probably more important than physical measures done by himself or herself), perhaps a speech therapist, a health visitor, an occupational therapist, and a social worker. The comings and goings of such an army of people may well confuse and irritate the family, and the doctor should try to strike a commonsense balance. He also has an important part to play in sustaining the morale of the family, educating them about the nature and effects of stroke, managing the patient's depression, and putting the patient in touch with a stroke club or day centre to help get him back into circulation. Sadly, such comprehensive management is given all too rarely, and many victims of stroke are left isolated at home with little contact with doctor, therapists, or friends.²⁵

Stroke is the most common cause of severe physical disability in our community,²⁶ yet we have very little information about the best way to manage individual patients. There are still no good studies of the results of rehabilitation carried out in hospital, at home, or shared between home and treatment centres.²⁷ The ultimate answer to stroke is prevention. In the meantime we should devote much more energy to determining the best ways of managing it.²⁸

GRAHAM MULLEY
senior registrar

T ARIE
professor

Professorial Unit of Health Care of the Elderly,
Sherwood Hospital,
Nottingham

References

- The stroke problem, *Modern Geriatrics*, 1971, **1**, 368.
- World Health Organisation, *Cerebrovascular Diseases: Prevention, Treatment and Rehabilitation, Technical Report Series No 469*. Geneva, World Health Organisation, 1971.
- United States Department of Health, Education and Welfare, *Guidelines for Stroke Care*. Washington, United States Government Printing Office, 1976.
- Weisberg, L A, and Nice, C N, Intracranial tumors simulating the presentation of cerebrovascular symptoms. Early detection with cerebral computed tomography (CCT), *American Journal of Medicine*, 1977, **63**, 517.
- Brocklehurst, J C, *et al*, Why admit stroke patients to hospital? *Age and Ageing*, 1978, **7**, 100.
- Langton Hewer, R, Stroke rehabilitation, in *Stroke. Proceedings of the Ninth Pfizer International Symposium*, ed F J Gillingham, C Mawdsley, and A L Williams, p 476. Edinburgh, Churchill Livingstone, 1976.
- Cochrane, A L, Burden of cerebrovascular disease, *British Medical Journal*, 1970, **3**, 165.
- Toole, J F, and Patel, A N, *Cerebrovascular Disorders*. New York, McGraw-Hill, 1974.
- Warren, M D, Cooper, J, and Warren, J L, Problems of emergency admissions to London hospitals, *British Journal of Preventive and Social Medicine*, 1967, **21**, 141.
- Matthews, W B, The treatment of acute cerebral infarction, in *Stroke. Proceedings of the Ninth Pfizer International Symposium*, ed F J Gillingham, C Mawdsley, and A L Williams, p 514. Edinburgh, Churchill Livingstone, 1976.
- Dronfield, M W, Mead, G M, and Langman, M J S, Survival and death from subdural haematoma on medical wards, *Postgraduate Medical Journal*, 1977, **53**, 57.
- Meyer, J S, and Portnoy, H D, Localised cerebral hypoglycaemia simulating stroke. A clinical and experimental study, *Neurology*, 1958, **8**, 601.
- Adams, R D, and Eecken, H M V, Vascular diseases of the brain, *Annual Reviews of Medicine*, 1953, **4**, 213.
- Twomey, C, Investigating stroke, *British Medical Journal*, 1978, **2**, 637.
- The Genuine Works of Hippocrates*, translated by F Adams, vol 2. London, The Sydenham Society, 1849.
- Kennedy, F B, *et al*, Stroke intensive care—an appraisal, *American Heart Journal*, 1970, **80**, 188.
- Drake, E W, *et al*, Acute stroke management and patient outcome: the value of neurovascular care units (NCU), *Stroke*, 1973, **4**, 933.
- Hill, J D, Holdstock, G, and Hampton, J R, Comparison of mortality of patients with heart attacks admitted to a coronary care unit and an ordinary medical ward, *British Medical Journal*, 1977, **2**, 81.
- Sutherland, A, A study of long stay admissions in the acute medical wards of the Aberdeen hospitals, Scottish Health Service Study No 22, Scottish Home and Health Department. Edinburgh, HMSO, 1972.
- Langton Hewer, L, Stroke units, *British Medical Journal*, 1972, **1**, 52.
- Adams, G F, Prospects for patients with strokes, with special reference to the hypertensive hemiplegic, *British Medical Journal*, 1965, **2**, 253.
- Gresham, G E, *et al*, Residual disability in survivors of stroke—the Framingham study, *New England Journal of Medicine*, 1975, **293**, 954.
- Oxbury, J M, Greenhall, R C D, and Grainger, K M R, Predicting the outcome of stroke: acute stage after cerebral infarction, *British Medical Journal*, 1975, **3**, 125.
- Opit, L J, Domiciliary care for the elderly sick—economy or neglect? *British Medical Journal*, 1977, **1**, 30.
- Isaacs, B, Neville, Y, and Rushford, I, The stricken: the social consequences of stroke, *Age and Ageing*, 1976, **5**, 188.
- Harris, A I, Cox, E, and Smith, C H W, *Handicapped and Impaired in Great Britain. Part I, Office of Population Censuses and Surveys*. London, HMSO, 1971.
- Wedell, J M, Rehabilitation after stroke—a medicosocial problem, in Skandia International Symposium on Rehabilitation After Central Nervous System Trauma, ed H Boström, T Larsson, and N Liungstedt. Stockholm, Nordiske Bokhandels Förlag, 1973.
- Report of the Geriatrics Committee Working Group on Strokes*. London, Royal College of Physicians, 1974.