



Letters to the Editor

Neurological recovery

Professor Tator *et al.*¹ seek to show that admitting patients to an acute spinal injury service between 1974 and 1981 had a better outcome than patients treated between 1947 and 1973. They seek to show that mortality, length of stay and neurological recovery were better in the group admitted to a spinal unit. They point out that:

'... The most robust clinical study designs involve prospective random allocation of similar groups of patients to either treatment or control groups so that significant differences between the two groups can be attributed with confidence to the treatment. In the present study it would not have been feasible to randomly allocate the patients to either the ASCIU or another hospital...'

However, the major flaw that they failed to evaluate is that treatment has changed between 1947/73 and 1974/81. Even on a spinal unit, treatment outcomes depend on the treatment available at the time.

Mortality

To compare mortality in 1947 with mortality in 1981 when there are all the facilities of intensive therapy units, cannot be appropriate.

I reported from the Liverpool Regional Paraplegic Centre in 1971:²

'... an acute mortality rate of 18 per cent for tetraplegics before routine anticoagulant therapy was started. In the same report, following anticoagulant therapy and elective tracheostomy and ventilation in tetraplegic patients with a vital capacity of less than 400 ml, the mortality rate fell to 4.5 per cent...'

If one were to look at the present Liverpool centre, which is leading the world in the management of ventilator patients at home, the mortality might well be higher since they are now taking in so many very sick people on ventilators from all over the country.

Length of stay

The authors evaluate treatment on the length of stay; this depends on the condition of the patient on admission, particularly regarding complications, and what you are attempting to achieve for the patient on discharge.

In the early days at Stoke Mandeville Hospital few patients were admitted and they stayed a long time, undertaking vocational training to learn how to make shoes or to repair watches. It was not unusual for patients to spend two or three years in the centre before being discharged to hostels. Patients are now discharged into the community.

Sir Ludwig Guttmann³ recorded:

1952 368 admissions, (107 new patients)

1964 1822 admissions, (256 new patients)

The total turnover changed from 670 in 1952 to 2781 in 1964.

Under Resettlement and Outcomes, in the early days patients were kept in a long time and went to hostels. This

is unacceptable today. Much more time is devoted to resettlement. It is possible to achieve very quick turnover by discharging patients inadequately rehabilitated only to be readmitted with complications. This is a politically sensitive issue in the UK at the moment where efficiency is being monitored by patient episodes. A patient is admitted after a heart attack, discharged too quickly and readmitted with heart failure. This counts as two episodes. No-one could pretend that it represents good medicine but depends upon peer review of the results achieved.

Neurological recovery

Little is understood about recovery, the keystone of management is to prevent deterioration by mis-management. It was appreciated by Frazier, Munro and Guttmann that early laminectomy caused neurological deterioration, a practice that has been advocated in North America. Nowadays there are several factors which may influence recovery, not doing a laminectomy, judicious early fixation and the use of steroids.

Unless these factors are meticulously compared, in the robust manner which they suggest of random allocation, the outcome cannot be measured in the manner in which Tator *et al.* postulate.

Having worked with spinally injured patients for the last forty years, the majority of the time on spinal injuries centres, I am entirely in sympathy with the views expressed and have, in fact, gone to court successfully to show that it is negligent not to transfer a patient to a spinal unit.

I do not believe that the facts adduced in this article substantiate the argument.

JR Silver MB BS FRCP Ed & Lond
Consultant in Spinal Injuries, The Chiltern Hospital,
Great Missenden, Bucks HP16 0EN, U.K.

- 1 Tator CH *et al.* Neurological recovery, mortality and length of stay after acute spinal cord injury associated with changes in management. *Paraplegia* 1995; **33**, 254-262.
- 2 Ravichandran G and Silver JR. Survival Following Traumatic Tetraplegia. *Paraplegia* 1982; **20**, 264-267.
- 3 Guttmann L. *Spinal Cord Injuries*, Comprehensive Management and Research. Blackwell. p. 626.

Reply from Professor Tator

Thank you for the opportunity to respond to John Silver's appraisal of our article. The following is my response.

I am pleased that Dr. Silver agrees that random allocation of patients to a unit or a non-unit would answer the questions posed by our article in a much more robust manner than has been accomplished by our study. However, it would be impossible to design such a study in our geographic area, and furthermore, it might be



considered unethical as well. Thus, we are forced to use the methodology of comparing two patient populations managed at differing times, with all the possible errors of doing so. The article frankly discusses these difficulties and so Dr. Silver's criticisms are not new to us.

Nevertheless, with the above caveats, we do feel that we have made a contribution by presenting the data. The

paper may be especially helpful in geographical areas in both developed and undeveloped countries which do not have spinal units for management of acute injuries from the first day.

Charles H Tator MD PhD FRCS(C)
Professor and Chairman
Division of Neurosurgery
Toronto Western Hospital,
Toronto, Ontario, M5T 2S8 Canada