

Spinal cord injuries in Iceland 1973–1989. A follow up study

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All traumatic SCI patients in Iceland come to the Neurosurgical Department of Borgarspítalinn, the City Hospital in Reykjavík for their initial treatment. From 1973–1989, 79 (93%) were rehabilitated at Borgarspítalinn.

The purpose of this study was to look at the most common complications and the social functions of SCI patients after discharge from the Rehabilitation Department.

A questionnaire was sent to 59 of the 79 patients. They represent almost the whole population of the spinal cord injured population in Iceland. Forty-five patients (76.3%) answered the questionnaire, 69% male, 31% female. Sixty-seven percent were under the age of 30 years at the time of injury. Twenty-nine percent had a complete spinal cord injury; 53.3% were wheelchairbound (Frankel grade A, B, C); 55.6% were quadriplegic, and 44.4% paraplegic.

The commonest complications were pain (64.4%), urinary tract infections (62.2%) and spasticity (60%); and 58% of the wheelchairbound patients had had pressure sores. Fifty-five point five percent were married; 71% had an active sexual life after the injury; 54% of the wheelchairbound patients were not quite independent and required some assistance with activities of daily living (ADL) tasks; and 29% were not working or studying compared to 11%, who were, before the injury. No significant changes were seen in social function after the injury.

The results show that more emphasis must be placed on the prevention of complications such as urinary tract infections and pressure sores and on the treatment of chronic pain and spasticity.

Keywords: spinal cord injury; Iceland; follow up study; complications; social functions.

Introduction

All traumatic spinal cord injured patients in Iceland come to the Neurosurgical Department of Borgarspítalinn, the City Hospital in Reykjavík, for their initial treatment. After their acute care, the majority of the patients are transferred to the Department of Rehabilitation and Neurology of the Hospital (93% in this study).

During the period 1973–1982 the incidence of new traumatic spinal cord injuries was 6 per year. As the population of Iceland is 250.000, this gives an incidence of 24 per 1 million. During the period 1983–1989 the incidence had decreased to 4.5 per year (18 per 1 million).¹

Fifty percent of all traumatic spinal cord

injuries in Iceland result from motor vehicle accidents and 37% from falls.² Falls as a cause of spinal cord injury are relatively more common in Iceland than in other countries.^{3–6}

Methods

The purpose of this study was to examine the late consequences and complications of spinal cord injury after discharge, and observe how well patients had reintegrated into the community. The basis for the study was 79 patients with traumatic spinal cord injury who had been rehabilitated at Borgarspítalinn since 1973. Nine of these patients are now dead, 2 could not be traced, 5

are living abroad and 4 were still at the Department of Rehabilitation at the time of this study.

An anonymous questionnaire was sent to the 59 patients who could be traced, 43 males (73%) and 16 females (27%). They represent almost the whole population of spinal cord injured in Iceland.

Results

Forty-five (76.3%) answered the questionnaire, 29 males (69%) and 13 females (31%); 55.6% (25) were quadriplegic and 44.4% (20) paraplegic; 53% were wheelchairbound (24) and 29% (13) had a complete spinal cord injury (Frankel A);⁷ and 66.7% (30) were under the age of 30 at the time of injury (Tables I, II).

Complications

The commonest complications after discharge were pain, urinary tract infections, spasticity and pressure sores.

Pain

Pain was the commonest complication in this study. Twenty-nine (64.4%) complained of pain, and it was more common in quadriplegics (75%, 19) than in paraplegics (44.4%, 8). Two (6.9%) did not state the site of their lesion (Table III).

Pain was equally common among patients

Table I

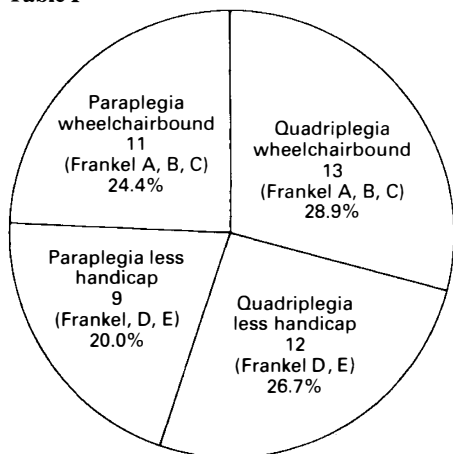


Table II

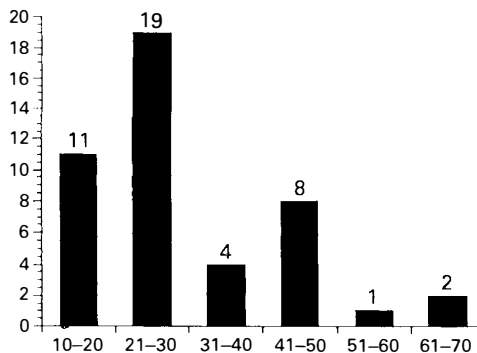
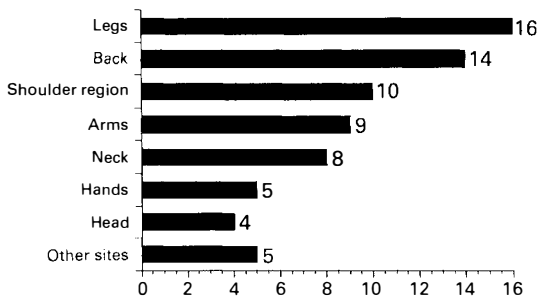


Table III



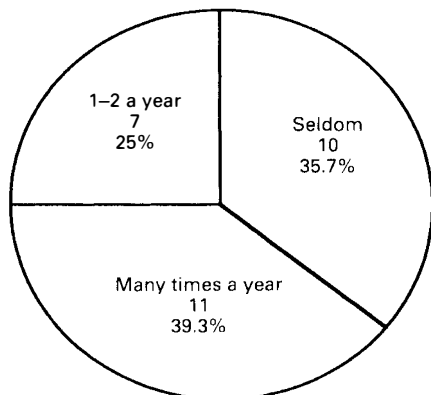
able to walk and in those who were wheelchairbound, and the legs were the commonest site of pain (55.2%, 16); 48.3% (14) complained of backpain. Pain in the shoulder region, arms and neck was also common. All the patients with severe pain were wheelchairbound (21.4%, 6). Some 34.5% (10) of the 29 patients used drugs for pain relief and 38% (11) other forms of treatment mainly physiotherapy.

Urinary tract infections (UTI)

Twenty-eight patients (62.2%) have had UTI, 39% having had a UTI several times in a year. The majority of these patients (63%, 7) used intermittent catheterisation as a method of bladder emptying. Ninety-six percent of the wheelchairbound patients reported urinary tract infections (Table IV).

Bladder emptying

Twenty-five patients (55.6%) do not have normal micturition; 52% of these patients

Table IV

(13) use reflex tapping as a method of bladder emptying; 48% (12) use intermittent catheterisation, 20% (5) use pressure over the bladder area and 8% (2) have an indwelling urethral catheter. (The total number is not 100% because more than one option was available.)

Spasticity

Twenty-seven (60%) have spasticity of varying degrees. The majority (20) were wheelchairbound and 18% of the whole sample complained of rather severe or a severe degree of spasticity (8); 22.2% (6) of those with spasticity used drugs, and 37% (10) stretched their spastic muscles regularly in order to control the spasticity.

Pressure sores

Pressure sores occurred in 58.3% (14) of the wheelchairbound patients. In most of these patients the injury was complete (Frankel grade A); 50% had surgical closure of their pressure sores.

Self care

Thirty-one patients were independent, although only 46% (11) of wheelchairbound patients were independent. Most patients needed assistance with bowel and bladder emptying, bathing and dressing. Some needed help with transfers.

Housing

Thirty-one patients (69%) were discharged home without any house adaptation being necessary, but in 13.3% (6) some was necessary. At the time of this study 13.3% (6) were living in an apartment/house specially designed for disabled people and 4.4% (2) were living in an institution for the disabled.

Marriage status before and after injury

Twenty-five patients (55.5%) were married or had a partner after the injury, whereas 35.6% (16) were married or had a partner before the injury; and 20.8% (5) of the wheelchairbound patients started a relationship after the accident. Only 4.4% (2 wheelchairbound males) became divorced after the injury.

Sexual function

Three patients (6.7%) did not answer this part of the questionnaire; 71% (32) had an active sexual life after the injury; 58% (14) of wheelchairbound patients had an active sexual life after the injury, and 70% of them (17) reported that they were capable of performing sexual intercourse.

Employment and education before and after injury

Thirty-two patients (71%) are working or studying following the injury, compared to 89% (40) before the injury; 62.5% (15) of the wheelchairbound patients are working or studying after the injury, 8 quadriplegics and 7 paraplegics.

Social function

There were no significant changes in social patterns after injury, for example visits to restaurants and theatres or travelling inland and abroad.

Discussion

Late complications were very common in patients with a spinal cord injury in this

study, and as expected the complications were most common among those who were wheelchairbound. This is analogous with other studies.^{8–10}

Chronic pain was the most common complication, especially in patients with a cervical lesion. The most common site of pain both in paraplegics and quadriplegics was in the legs. Backpain was more common in paraplegics. No paraplegic patient complained of pain in the neck/shoulder region.

A study made by the Administration of Occupational Health and Safety in Iceland¹¹ showed that 40–65% of the Icelandic population between the age of 16–65 years of age complained of pain in the neck/shoulder region and in the back, thus the pain incidence in our group of spinal cord injured patients does not differ from the results of that study. As most of the SCI patients did not have pain before the injury it can be assumed that the pain resulted from the injury, and to some extent to strain and overuse after the injury.

Reflex tapping and intermittent catheterisation were nearly equally used as methods of bladder emptying among wheelchairbound patients, whereas in the study of Drewes *et al*⁸ reflex tapping was the commonest method of bladder emptying.

The majority of those who reported UTI many times a year were wheelchairbound and used intermittent catheterisation.

All of the patients who complained of a severe degree of spasticity were wheelchairbound. Spasticity was more common in patients with a cervical lesion. Patients who stretch their spastic muscles regularly claim that they are able to diminish the degree of spasticity by this manoeuvre. Twenty-two percent used drugs to reduce the spasticity, compared to almost 50% in the study of Drewes *et al*.⁸

Fifty-four percent of the wheelchairbound patients were not totally independent but I did not ask about the degree of assistance needed.^{10,12,13}

SCI did not appear to influence the marital status of the individuals in this study; 5 of the wheelchairbound patients started a relationship after the injury, 3 were quadriplegic males, 2 were paraplegics, 1 male and 1 female.^{13,14} The female patient

gave birth to two children after her injury.

Sixty-two point five percent of the wheelchairbound patients are working or studying after their injury. Assuming that those who are studying will obtain employment after completing their education, there was no significant difference between the employment figures for paraplegics and quadriplegics. This is different from other studies where the employment figures for paraplegics are usually higher. The employment figures of the spinal cord injured population in Iceland seem to be higher than in other studies.^{13–16}

Difficulties in psychological adjustment to the disability and depression after discharge do have an influence on the engagement in activities after injury. In this study I did not study the possible effects of depression, but I asked about different social activities after discharge. There was no significant difference in social patterns before and after the injury.^{16,17}

Conclusions

As the study shows, pain, urinary tract infections, spasticity and pressure sores were the most common complications of spinal cord injury in our patients. It is important to pay attention to the high rate of complications, and greater emphasis must be placed on the prevention of urinary tract infection, of pressure sores and of spasticity early on in the rehabilitation programme. Improved physical fitness will help with everyday functions and may help to diminish the chronic pain that to some extent is caused by strain and overuse. It is therefore important to emphasise the importance of exercises and physical activity for the spinal cord injured patient. A yearly follow up after discharge is very important concerning the reduction of complications.⁵

Team work is important in order to obtain optimal results, and every member of the team is important; but the most important team member is the spinal cord injured patient himself. It is essential that he realizes that he is responsible for his own treatment and for the prevention of complications.⁴

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