

Follow up Study of Rehabilitation of Spinal Cord Injury Patients Rehabilitated in Rehabilitation Research Centre from the Year 1984 to 1993

**Dr. Arvind Kumar Gupta, Dr. Anil Kumar Jain,
Dr. M.K. Mathur, Dr. Gita Devi Purohit**

Abstract

The Present study is analysis of spinal cord injury patients admitted in Rehabilitation Research Centre from the year 1984 to 1993. Out of 461 letters posted only 45 patients turned up for follow up. Comparisons were made from several studies conducted in western countries. Common findings and differences were observed and analysed to find out the reasons. Considerable similarities were found in age and sex distribution and level of injuries. Common cause of injury in India was different which can be explained by prevalence of high speed vehicles, sports injuries and violence in western countries.

Extent and depth of disabilities psychological and sexual implications renders the spinal code injuries most devastating calamities in human life. Due to improvement in medical care and rehabilitation services now majority of patients do arrive at a stage where they seek attention of community and are ready for rehabilitation within the community at large. Casual attitude towards safety measures among rural population needs to be corrected and emphasising that prevention is better then cure can reduce the incidence to a significant extent. Community resources should be mobilised with the help of voluntary organisations to make the disabled a productive member of society. It must be dealt as medical as well as a social problem.

Introduction

Spinal cord injury is one of the most devastating calamities in human life. The extant and depth of disabilities physically drives back the person to infancy as far as dependency for activities of daily living is concerned. Its psychological and sexual implications makes it a disease of social stigma. It demands many psychological adjustments from the injured person as well as his family and friends.

Due to improvement in emergency

Address for correspondence :

*Dr. Anil Kumar Jain, D-52, Staff Colony, M.R. Engg.
College, Jaipur 302 017*

medical care a good number of seriously ill spinal cord injury patients survive. Better availability of rehabilitation services make them socially and economically productive. This brings about amazing reversal of attitude. A reversal now generally accepted and acknowledged. The present study has been undertaken to know the functional level of independence of spinal injury patients admitted in Rehabilitation Research Centre from 1984 to the year 1993.

Material and Method

The present study has been carried out on spinal cord injury patients admitted in rehabilitation

research centre from the year 1989 to 1993.

From the bed head ticket available in the record room a list of all patient who had suffered traumatic spinal cord injury was compiled and letters were sent to all patients for a follow up study.

Out of 461 letters posted only 45 patients turned up. Most of the letters were returned because of incomplete addresses, non availability or migration of patients leaving no forwarding addresses. Identification data were noted and patients were divided in rural and urban groups. Marital and employment status before injury and at the time of follow up was recorded.

On the basis of type of work different groups were made including farmers,skilled labourers and semiskilled workers. Date of injury,causes of injury and associated injuries were recorded.

Levels of spinal Injuries were recorded with the help of roentgenograms available. Complete and incomplete lesions were determined by complete neurological examination.Functional independence in various activities of daily living was considered as follows:

A total of ten items were included in four categories.

Self care

Grooming

Eating

Dressing upper body

Independent/with assistance

Dressing lower body

Sphincter control

Independent/with assistance

Bowel management

Bladder management

Transfer activities

Independent/with assistance

Locomotion

*Walking independently
Walking with orthotic aid, Wheel chair/tricycle*

Following important domains of personal life were explored:-

- 1. Social including both initial meeting with others and friends*
- 2. Sexual relationship*
- 3. Personal adjustment*

The responses recorded were as under

Meeting others *Easier
More difficult
The same*

Friends lost as a result of injury

*More
Less
Same*

Sexual implications

Sexual relations *Present
Absent*

Feeling about self

*Positive
Negative
No change*

Observations

Most of the patients reporting to this study were partially recovered casus.

1. Most of the persons suffered spinal cord injury in their prime of life(46.6% in 30-44 yrs.) and 40% in 15-29 yrs.). In pediatric age group (0-14 yrs.) it was 4.4%, In Geriatric age group(60yrs. or more)it was 6.6%. This is because of restricted physical activities and limited outdoor life in both the age groups.

2. In this series 80% of the patients were males.And most of them suffered Injury due to their greater exposure to environmental and professional hazards.Male female ratio was 4:1 which is consistent with findings reported by other workers (Key and Retief,1970,Wilcox et al 1970).

3. In the present study almost one third of

the patients were 1-3 yrs. duration, 27.6% were of quite long duration (4-9 yrs.) and one case was found to be of more than 10 yrs. duration.

4. Most common cause of injury was due to fall from height 66.6%. Road traffic accidents and fall of heavy object on the patient were next common cause for the injury in the present series.

5. Most common site for fracture were at thoracolumbar junction (42.2%) which is consistent with findings by Jefferson (Jefferson Cr 1927-28) and also by Calenoff and Chesare (1978).

6. Rural (73.3%) persons more often sustained spinal cord injuries than urban 26.6%. Similar findings were reported by other workers in India, Shanmugasundaram 1984, V. Chacko, B. Joseph, S.P. Mohanty 1986.

7. In 17.7% cases associated injuries were also present.

8. Associated injuries occurred more commonly in cervical injuries in comparison to thoraco lumbar spine. In only one case multiple injuries were found.

9. 80% of patients were married at the time of injury.

10. Two patients were engaged at the time of injury, their engagement was broken later on from female side as they did not show any recovery.

11. Two cases got divorced after sustaining spinal cord injury.

12. 22.2% patients were farmers and 13.3% were labourers.

13. At the time of follow up study various changes were observed in work activity of spinal cord injuries patients as shown in Table no. 2.

20 patients (44.4%) were found to be unemployed after spinal cord injury.

14. Only three students could continue their studies after sustaining SCI.

15. None of the patients was found to do farming at the time of study. Out of 10 patients only three patients were able to supervise

farming. Rest 7 patients were unemployed.

16. Out of 6 labourers only one was running a tea stall and rest five were unemployed.

17. Out of 2 semiskilled workers only one could continue the work. One was unemployed.

18. Only one patient who sustained spinal cord injury required assistance in grooming. The same case was dependent for eating and dressing activities.

19. Out of 45 patients 42 patients were able to manage their bladder independently and 39 patients were able to manage their bowel independently.

20. 37 patients out of 45 were independent in transfer activities.

21. Out of 45 patients only 24 patients 53.3% were walking independently.

22. The effect of injury on friendship varied in this series. Seventeen lost friends, five lost many friends and 23 claimed they had not lost any friends as a result of injury.

23. 20 patients out of 35 were having sexual relations with their partners.

Discussion

The extent and depth of disability caused by spinal cord injuries make it most devastating calamities in human life. The social stigma attached to it renders it most ugly face of human life. It must be dealt as a medical as well as a social problem.

Psychological Status

Depression is inevitable sequelae of spinal cord injury disability, it removes the individual from normal social experience and from work places thus devoiding him from major sources of satisfaction and self esteem. When person is confined to wheel chair for rest of the life, his self image is shattered.

Loss of ability to perform sexual act and bladder bowel control adds to more psychological

**Table No.1
Causes of Spinal Cord Injury**

Aetiology	No. of cases	Percentage
Falls	30	66.6%
Road traffic accidents	8	17.7%
Weights (any heavy object falling on back)	7	15.5%
Total	45	100

**Table No. 2
Type of Work done by SCI Patients before and after Onset**

Aetiology	No. of cases		Percentage	
	before onset	after onset	before onset	after onset
Farmers	10	--	22.2%	--
Labourers	6	--	13.3%	--
Semiskilled workers	2	1	4.4%	2.2%
Skilled workers	5	5	11.1%	11.1%
Service	3	2	6.6%	4.4%
Shop	4	3	8.8%	6.6%
Supervisory work	--	3	--	6.6%
Housewife	8	7	17.7%	15.5%
Studying	6	3	13.3%	6.6%
Grazier	1	1	22.2%	2.2%
Doing nothing	--	20	--	44.4%
Total	45	45	100	100

**Table No. 3
ADL Activity Ambulation**

Walking Independently	Walking with HKAFO	No. of cases				Lifing
		Walking with AFO	Using Wheel-chair	Using Tricycle		
24	1	8	4	1	7	

problems. He needs time to evolve a new image of self. He remains so busy in integration process that no energy of motivation is left for him to think and plan for the future (Warde 1977: 10) the new image which he evolves for himself depends on his premorbid personality and on attitudes of those around him and opportunities that come his way.

Community Support

From the time the patient is admitted to Rehabilitation centre the goal is to help him return to the community as soon as possible, functioning at his maximum potential. The indifferent attitude of family members or lack of opportunities and community support may turn even a strong personality into a bitter and frustrated individual.

Given the necessary community support however a paraplegic with a basically strong will power can once again become a well adjusted, socially and economically productive individual.

Until the recent past the rehabilitation of spinal injured did not attract much attention. With improvement in medical care the chances of survival of spinal injury patients through acute phase has increased. Now majority of patients do arrive at a stage where they no longer need medical care and are ready for rehabilitation within the community at large.

In our study age distribution of our patients are comparable with studies from other parts of the world. In the study by Philip Fine and Keith 1979-80, 54% cases were among persons between 15-29 yrs. of age and similar findings have been reported by Key and Retief, 1970, Guttmann 1976. In this age group persons are more exposed to dangerous occupations outside the home where they can sustain injuries.

The ratio between males and females was found to be 4:1 which is consistent with findings reported by other workers (Key and Retief 1970). This can be explained by greater involvement of male population in high risk jobs as compared to

females.

The etiology of spinal injuries is diverse. Road traffic accidents are the major cause of spinal injuries in reported series from the western countries like in Keith and Fine study (1979-80) 42% of spinal injuries occurred due to road traffic accidents. Contrary to this, cause of spinal injuries in India are different.

Two thirds of the patients were from rural areas due to the fact that 75% population of India lives in the villages. The main causes of Spinal Cord Injury in India are different than western countries. The main cause in India is fall from height which was also reported by the Shanmugasundaram 1988, S.P Mohantey and T. Jacob.

The incidence of associated injuries is low in comparison to other studies reported by western workers like Guttmann in 1963 reported 28%, Meinecke 1968 reported 57.1%, Jodin et al 1984 reported an incidence of 76%.

Fracture of the long bones was found to be most commonly associated injury (17.7%). This may be because of etiological differences. In western countries motor vehicle accidents, sports injuries and violence are the main etiological factors.

Thoracolumbar spine being transitional zone between rigid thoracic spine and mobile lumbar spine is commonly injured area. 42.2% cases sustained injury around thoracolumbar junction. 3/4 of the patients were married at the onset of spinal injury. The same fact was also reported by Shanmugasundram in 1984. This is due to the fact that marriages in India take place at an early age.

Post spinal cord injury marriages were found in none of the cases. In our study and Madras project, divorce rate and separation was found negligible.

Out of 6 students only three could continue their studies.

Conclusions

Majority of patients sustained spinal injury in prime age of their life, majority being due to fall from height which is preventable by using safety measures.

Most patients belong to rural area where awareness of people towards safety measures is very low. Awareness can be increased by educating them to practice safety measures and emphasising that prevention is better than cure. Community support is negligible for spinal injury patients. To improve their social and economic status voluntary organisations should mobilise community resources and community based rehabilitation can prove more useful. More and more independent life style should be stressed so that they can become productive members of the society. Post spinal cord injury marriage was found in none of the cases. This indicates poor social acceptance of spinal injury patients.

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