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Socio-demographic Characteristics and Mode of Traumatic Thoraco-Lumbar Spine Injuries at a Referral Tertiary Care Hospital in Bangladesh

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Abstract

Background: Traumatic thoraco-lumbar spine injuries occur in different ways during working. **Objectives:** The purpose of the present study was to find out the-demographic Characteristics and Mode of Traumatic Thoraco-Lumbar Spine Injuries. **Methodology:** This cross-sectional study was conducted at the National Institute of Traumatology and Orthopaedic Rehabilitation (NITOR), Dhaka, Bangladesh from July 2004 to June 2006 for a period of 2(two) years. Patients with diagnosed cases of traumatic thoraco-lumbar spinal injury with complete or incomplete cord lesion irrespective of sex were selected as study population. An elaborate history of the selected patient was taken with an emphasis of mechanism, time of injury, past history of illness. **Result:** A total number of 17 patients with thoracolumbar spine injury were recruited. Out of 17 patients, 7(41.2%) patients were in the age group of 21-30 years that is very younger age group. The mean age was 29.29 years. The male and female ratio was 4.7:1. In this series most affected people are farmer (47.05%). Most affected groups are injured by fall from height (70.58%) especially from tree and from roof of the buildings. **Conclusion:** Young age group male workers are most commonly affected in traumatic thoraco-lumbar spine injuries. *[Journal of National Institute of Neurosciences Bangladesh, 2018;4(1): 51-53]*

Keywords: Socio-demographic characteristics; mode of injuries; traumatic; thoraco-lumbar spine

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Introduction

Thoraco-lumbar junction is particularly prone to injury because of the transition between the relatively fixed thoracic spine and relatively mobile lumbar spine[1]. Injury to the cord or cauda equina occurs in approximately 10-38% of adult thoracolumbar fractures and as many as 50-60 % of fracture dislocation[2]. A high percentage of lumbosacral fractures occur in younger than 30 years and nearly 60% of patients have serious disabling deficits[3].

In spinal injuries the displaced structures may damage the cord or nerve roots or both. Cervical lesion may cause quadriplegia and thoracolumbar lesion may produce paraplegia[1]. Fractures of the thoracolumbar junction can produce a mixture of cord and root syndromes caused by lesions of the conus medullaris and lumbar nerve roots.

It is very important o see the socio-demographic profiles and the way of injury to the thoraco-lumbar spine for the management. Therefore, this present study was undertaken to find out the socio-demographic characteristics and mode of traumatic thoraco-lumbar spine injuries.

Methodology

This was a cross-sectional study and was undertaken at the National Institute of traumatology and Orthopaedic Rehabilitation (NITOR), Dhaka, Bangladesh from July 2004 to June 2006 for a period of 2(two) years. Patients with diagnosed cases of traumatic thoraco-lumbar spinal injury with complete or incomplete cord lesion irrespective of sex were selected as study population. Non-traumatic paraplegic patients were excluded from this study. An elaborate history of the selected patient was taken with an emphasis of mechanism, time of injury, past history of illness. This was followed by a thorough general, local, and neurological examination for proper assessment. Anterior-posterior and lateral view X-rays were taken of the respective sites and MRI of thoracolumbar region were taken for proper spinal cord injury as well as bony injury evaluation. A predesign proforma containing history and examination finding of the patient were used.

Results

A total number of 17 patients with thoracolumbar spine injury were recruited by non-random purposive sampling technique of which 12 patients were incomplete cord lesion and 5 patients were complete cord lesion. Out of 17 patients, 7(41.2%) patients were in the age group of 21 to 30 years that is very younger age group. The lowest age incidence was 11 years and the highest was 60 years in this series. The mean age was 29.29 years (Table 1).

Table 1: Age distribution of Study population

Age Group	Frequency	Percent
Less than 20 Years	4	23.5
21 to 30 Years	7	41.2
More Than 31 Years	6	35.3
Total	**17**	**100.0**
Mean ± SD	29.29±17.756	
Age Range	11 to 60 years	

In this series out of total 17 patients, 14(82.4%) are male and 3(l7.6%) are female. The male and female ratio was 4.7:1 (Table 2).

Table 2: Sex distribution of Study population

Gender	Frequency	Percentage
Male	14	82.4
Female	3	17.6
Total	**17**	**100.0**

In this series most affected people are farmer (47.05%) and other occupation group affected less (Table 3).

Table 3: Distribution of patients according to occupation

Occupation	Frequency	Percentage
Farmer	08	47.05
House wife	02	11.76
Shop keeper	02	11.76
Maid servant	01	5.88
Service holder	01	5.88
Teacher	01	5.88
Driver	01	5 .88
Weight Bearer	01	5 .88
Total	**17**	**100.0**

Most affected groups are injured by fall from height (70.58%) especially from coconut tree and from roof of the buildings, all are accidental fall but those two females had a history of suicidal fall from top of the roof (Table 4).

Table 4: Distribution of Patients According To Mode of Injury

Mode of Injury	Frequency	Percentage
Fall from height	12	70.58
a) Fall from tree	6	35.29
b) Fall from roof of building	6	35.29
Direct Trauma RTA and others		11.76
Fall of heavy object over back	3	17 .64
Total	**17**	**100.0**

Discussion

Thoraco-lumbar junction is most common area of injury to the axial skeleton[4]. The reason of this is due to more mobile of lumber than immobile thoracic segment[5]. Thoraco-lumbar junction trauma often associated with neurological dysfunction. It is most often results from fall from height, automobile trauma. Vertebral column has two distinct functions that become compromised in the injured person and that must be considered in the diagnosis and treatment of each case. The first function is to house and protect the spinal cord itself second important function of the vertebral column is the structural support offered as a part of the axial skeleton[6].

The present study was undertaken at National Institute of Traumatology and Orthopaedic Rehabilitation (NTTOR), Dhaka. This is a study of evaluation of results of Tratunatic Thoraco-lumbar injury through posterior approach. In this study most of the patient felt under 21-30 years age group 4l.2%, while the next common age group the 31 to 40 years age group 29.4%. The mean age incidence was 29.29 years. Jesse at el[7] stated mean age group 29 years range (8 to 63 years). High incidence of young adult in the present series is due to higher rate of mobility as well as working group peoples.

Male population in this study constitutes 82.35% while females made up the remaining 17.64%. According to series of Chetan at el[5] male are four times higher risk than female and his series contain incidence male (80%) and female (20%). Male representation in many series is in majority. Males being the major working force of our society are thus more consistently exposed to the external environment, which probably accounts for this predominance. According to series of Chetan at el[5], male is four-time higher risk than female and his series contain incidence male 280% and female 20%.

In present series most involved occupational group is farmer (47.05%), while next common group is housewife and shopkeeper (11.76%). Farmers are occupationally vulnerable group in contest of Bangladesh as they are active workers and by analyzing the mode of injury it is also cleared that fall from height especially from coconut trees are the main cause of injury in this occupation group.

Fall from the height (70.58%) is the most common mode of Thoraco-Lumbar injury in this country; interestingly half of those falls from coconut trees; other half of those fall from top of buildings. Next common group of involved mode of injury is fall of heavy object over back during working (l7.64%). In series of Jesse at el[7] it has been found that the common mode is road traffic accident (48.44%) and among those study population automobile accident is 26.05% and motorcycle accident is 22.44% cases. Next common mode of injury is fall (30.6l%). The mode of injury in Thoraco-Lumbar spine in between two series is due to socioeconomically status difference between two places of study. In Bangladesh fall from height is the prime group in contrast to that in America where Jesse at el[7] study has done are more porn to road traffic accident.

Conclusion

In conclusion the most common age group is younger age group. Furthermore, male gender are predominant than female. Most commonly farmers were affected. Fall from height was the commonest cause of thoraco-lumber injuries followed by injury due to fall of heavy object over back.

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