



# Evaluation of Orthopedic morbidities among patients attending the Casualty Department in a Medical College Hospital

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**How to cite this article:** Lakshmeesha T, Praveen G. Evaluation of Orthopedic morbidities among patients attending the Casualty Department in a Medical College Hospital. IAIM, 2014; 1(4): 58-62.

**Available online at** [www.iaimjournal.com](http://www.iaimjournal.com)

**Received on:** 30-11-2014

**Accepted on:** 03-12-2014

## Abstract

**Introduction:** Injuries are becoming major public health problem worldwide and since India is also passing through a major socio-demographic, epidemiological and technological transition injuries are coming up as an emerging health problem. This study was aimed at analyzing the morbidities of orthopaedic injuries among patients attending the casualty department in a medical college hospital.

**Material and methods:** The record analysis of injured patients attending the casualty department over a 12 months period from Jan 2013 to Dec 2013 was done. The data was analyzed to know the pattern of orthopedic injuries.

**Results:** A total of 1100 injured patients attended the casualty department were analyzed. Study showed that 880 (80%) of victims were in the age group of 11-45 years. 825 (75%) were males and 275 (25%) were females. Road traffic accident (RTA) was the most common cause of injuries being responsible for 660 victims (60%) followed by fall from height 242 (22%). Study revealed that in 770 (70%) of the victims the most common presentation of morbidity was fracture and the most common site was lower limbs in 378 (49%). Next most common site was upper limbs followed by pelvic fracture, spine fractures, facial fracture & Ribs fracture. 792 (72%) cases had simple fracture. 44 (13%) cases had various dislocations, shoulder dislocation being the most common. Most common visceral injury was head injury 198 (18%).

**Conclusion:** Fractures were the most common pattern of orthopedic injuries, frequently associated with head injuries. Research into appropriate strategies for prevention of injuries, especially RTA is required in medical college hospital.

## Key words

Fracture, Orthopedic injuries, Road traffic accidents.

## Introduction

Road traffic accidents are responsible for a substantial proportion of deaths and injuries and are responsible for more years of life lost than most human diseases. Road traffic accidents are a growing problem worldwide accounting for around 1.2 million deaths and over 50 million injuries annually [1]. It is expected that by the year 2020, RTA will rank third in the global burden of diseases [2]. This level of attention to road safety underscores the global burden of road traffic injuries and the need for public health concerned towards reducing this epidemic. India is still in the developmental stages with relatively few published data, thus documentation of injuries is inadequate and posing great difficulty in assessing these data. This study was designed to identify the characteristics of orthopedic injuries as seen in the Hassan institute of Medical sciences and identify potential areas of development to enhance trauma research, an important adjunct to effective policy formulation and implementation.

## Material and methods

This was a retrospective study of record analysis conducted at the casualty department of Hassan Institute of Medical Sciences. The patients attending the casualty department of Hassan institute of Medical sciences during Jan 2013 to Dec 2013 were included in this study. Personal data and pattern of injuries sustained were extracted from the case records, casualty register and operation records. Data extraction was manually done by reviewing each case file since there was no trauma registry.

## Results

During the 12 months study period, 1100 injured patients were seen in the casualty department. 880 (80%) of victims were in the age group of 11-45 years. There were 825 (75%) males and 275 (25%) females. Road traffic accident was the most common cause of injuries being responsible for 660 (60%) of patient injuries.

Other causes were fall from height in 242 (22%), fall from stairs in 16 cases (1.5%), fall on ground in 11 cases (1%), occupational injuries in 77 cases (7%), assault in 88 cases (8%), sports related in 6 cases (0.5%) as per **Table - 1**. Study revealed that in 770 (70%) cases the commonest injury was a fracture and the most common site was lower limbs in 378 (49%) with the tibia or fibula being the most common bones to be fractured. Next common site was upper limbs 220 (28.5%) followed by pelvic fractures 60 (7.9%), spine fractures 70 (9.1%), facial fractures 20 (2.6%) and rib fractures 22 (2.9%). 555 (72%) cases had simple fractures and remaining 215 (28%) cases had compound fractures as per **Table - 2** and **Table - 3**.

**Table - 1:** Distribution of patients based on the orthopaedic injuries.

Orthopedic injuries		Number (%)
RTA		660 (60%)
Falls	Fall from height	242 (22%)
	Fall from stairs	16 (1.5%)
	Fall on ground	11 (1%)
Occupational injuries		77 (7%)
Assault		88 (8%)
Sports related		6 (0.5%)



**Table - 2:** Distribution of patients based on the type of injuries.

Type of injuries	Number (%)
Fracture	770 (70%)
Fracture of lower limb	378 (49%)
Fracture of upper limb	220 (28.5%)
Pelvic fractures	60 (7.9%)
Spine fracture	70 (9.1%)
Facial fractures	20 (2.6%)
Rib fractures	22 (2.9%)
Dislocation	44 (4%)
Sprain and Strain	154 (14%)
Lacerations	110 (10%)
Contusions	55 (5%)

**Table - 3:** Distribution of patients based on the types and number of fractures.

Variables	Number (%)
<b>Types of fracture</b>	
Simple fracture	555 (72%)
Compound fracture	215 (28%)
<b>Number of fracture</b>	
Single bone fracture	400 (52%)
Two bone fracture	231 (30%)
Multiple bone fracture	139 (18%)

Single bone fracture was present in 400 (52%) cases, two bone fractures was present in 231 (30%) cases and multiple fractures were seen in 139 (18%) cases as per **Table - 3**. There were 44 (4%) cases of various dislocation, shoulder dislocation being the most common.

The sprain and strain of ligaments and muscles were present in 154 (14%) cases only laceration was present in 110 (10%) cases and contusions with intact skin were present in 55 (5%) cases. Most commonly associated visceral injury was the head injury in 198 (18%). Pelvic injuries in 33 (3%) cases, thoracic injuries in 17 (1.5%) cases, abdominal injuries were present in 17 (1.5%)

cases and genitourinary in 11 (1%) cases. No visceral injuries were found in 824 (75%) cases as per **Table - 4**.

**Table - 4:** Distribution of patients based on the associated visceral injuries.

Visceral Injury	Number (%)
No visceral injury	824 (75%)
Head injury	198 (18%)
Pelvic injury	33 (3%)
Thoracic injury	17 (1.5%)
Abdominal injury	17 (1.5%)
Genitourinary injury	11 (1%)

## Discussion

Our study showed that road traffic accidents are the commonest cause of injury in our center. This high prevalence of RTA, 60%, was noteworthy as it has implications for the provision of adequate facilities for managing road traffic injuries. This high rate is probably because of the location of the study center on National Highway – 75. In the present study, other modes of injuries were falls in 270 (24.5%) cases, occupational injuries in 77 (7%) cases, assault in 88(8%) cases and sports related in 6 (0.5%) cases.

Solagberu, et al. [3] has reported 62.3% prevalence of RTA in their trauma series from Nigeria. In a study conducted by Gururaj G, et al. [4] in 2004 found that RTA was responsible for 52% of injuries; fall for 13%, occupational injuries constituted 4% and assault 3% of total injuries. In the study by Huda N, et al. [5], the commonest mode of injury was roadside accident seen in 48.13% cases, followed by fall in 29.5%, assault in 5.4%, occupational injuries 10.5% and sports related in 4.17%.



In the present study, maximum number of victims was between 11-45 years (82%). Similar age distribution has been reported in other studies from developing countries [6, 7, 8, 9, 10, 11]. Considering the maximum involvement of individuals in the economically productive years, RTA may have an important economic impact. It also implies that interventions should be designed so as to target these individuals.

Majority of those injured in the present study were males 825 (75%) and 275 (25%) were females. This is in conformity with other studies in India [6, 9, 10, 11, 12, 13, 14]. Preponderance of males attributed to their greater exposure to traffic and more risky behavior than females.

In the present study, fractures were the most frequently seen injuries accounting for 770 (70%) of all injuries and the most common site was lower limb in 378 (49%). A cross sectional study in India showed that fractures were the commonest injury among the victims of nonfatal road traffic accidents, and majority of the victims were in the age group of 18-37 years [15]. Another hospital based study of 450 cases admitted due to traffic accidents in India revealed that commonest type of injury was a fracture (49.33%) and the most common site of fracture was a lower limb (48.2%) [16].

In the present study simple fractures were seen in 555 (72%) cases and compound fractures were present in 215 (28%) cases. In a study by Malhotra C, et al. [17], compound fractures were present in 31.6% cases. In the study Huda N, et al. [5], compound fractures were seen in 39.9% cases and simple fractures were present in 66% cases.

## Conclusion

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Fractures were the most common pattern of Orthopaedic injuries. They were frequently

associated with other injuries especially head injuries. Research into appropriate strategies for prevention of injuries especially RTA, is required, but this must start with the establishment of institutional and regional trauma registries for complete documentation of relevant data.

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**Source of support:** Nil

**Conflict of interest:** None declared.