

Accidental & Homicidal Limb Injuries Reporting at Bone Care & Trauma Center

Salman Ahmed Farsi Kazi*, Parvez Rais Khan**, Mustafa Parvez Khan***

ABSTRACT

Objective: The present study was conducted to evaluate causes, types, patterns and medico legal aspects of limb injuries at Bone Care and Trauma Center Hyderabad.

Study design: Retrospective, observational study

Place and Duration: Bone Care and Trauma Center Hyderabad from Jan to Dec 2013.

Subjects and Methods: Patient's files of January to December 2013 were evaluated retrospectively. 5600 files of patients were checked, of which 1087 were included in study protocol. The required data was collected on pre designed proforma. The variables were typed on SPSS version 21.0 for analysis. Continuous and categorical variables were analyzed using students t-test and chi-square test. Microsoft excel was also used for graphing purpose. P-value = 0.05 was defined as significant.

Results: Of total 1087, 901 (82.8%) were male and 186 (17.1%) were female. (p=0.0001). Mean±SD age was noted as 39±11.5 years. Road traffic accidents were noted in 549 (50.5%), remaining cases belonged to social quarrels, assaults, fire arm injuries, falls and sport injuries. Of 1087, 1014 (93.2%) were non medico legal and 73 (6.7%) cases were medico legal, of which 41 were accidental, 23 were homicidal and 9 were of suicidal nature.

Conclusion: Most common cause of limb injuries was road traffic accident, and commonly by motorcycle.

Key words: Limb injuries, Fractures, Medico legal aspects, Hyderabad

INTRODUCTION

Worldwide occurrence of limb injuries is a fact which cannot be denied. Limbs injuries are common in road traffic accidents (RTA). Limb injuries are on rise because of modernization, urbanization, industrialization, fire arms and violence in society.¹ RTA is one of the causes of trauma which has increased these days.

Trauma is a leading cause of mortality and moreover functional disability in young adults.² A previous study from Nigeria reported that the injuries has been noted increasing and most often causing mortality and morbidity in form of functional disabilities in case of limb injuries³. A limb injury may involve an upper or lower limb or both. Limb injury may occur in isolation, or associated with various body parts as has been observed in RTA, FAI, industrial accidents, sports and assaults. Globally, RTA ranks 9th as cause of traumatic injuries and is a leading cause of mortality, morbidity and functional handicap. Ranking of RTA is projected to rise to 3rd position by 2020 year.⁴ Hence the importance of developing strategies to prevent limb injuries cannot be over-emphasized.³⁻⁶ The present is a retrospective analysis of limb injuries at Bone Care and Trauma Center Hirabad, Hyderabad. Bone Care and Trauma Center is a leading center of Hyderabad dealing with traumatic injuries and related bone

* Associate Professor, Deptt: of Forensic Medicine
ISRA University, Hyderabad.

** Consultant Orthopaedic Surgeon,
Bone Care & Trauma Centre, Hyderabad.

*** Medical Officer, Deptt: of Orthopedics
ISRA University Hyderabad.

Correspondence to:

Dr. Salman Ahmed Farsi Kazi

Associate Professor,
Department of Forensic Medicine & Toxicology,
ISRA University, Hyderabad.
Email: drsalmanakazi@gmail.com

injuries. It caters hundreds of patients each month. Present audit of limb injuries, its patterns, severity, and medico legal aspects is intended to make awareness about the problem so that preventive measures may then be taken in proper direction to improve public health and making strategies and guidelines for future.

MATERIAL & METHODS:

This retrospective study was conducted to analyze causes and types of limb injuries, limb bones involved and medico legal aspects. Bone Care and Trauma Center is most busy orthopedic center of Hyderabad. Center provides best orthopedic services to patients, and receives hundreds of patients a month, most of which belong to traumatic injuries.

Patient's files of January to December 2013 were evaluated in order to gather data as regards to study parameters. 5600 files of patients were checked, of which 1087 were included in study protocol. The required data was collected on pre designed proforma.

The data was analyzed on SPSS version 21.0 for windows release (IBM, incorporation, USA). Continuous and categorical variables were analyzed using students t-test and chi-square test. Continuous variables were presented as mean \pm SD and categorical variables as frequency and %.

Microsoft excel was used for graphing purpose. Data was presented as tables, charts and

graphs. P-value = 0.05 was defined as significant.

RESULTS:

Of total 1087, 901 (82.8%) were male and 186 (17.1%) were female. ($p=0.0001$). Mean \pm SD age was noted as 39 ± 11.5 years. Age distribution showed 3rd and 4th decade as most common noted in 346 (31.8%) and 411(37.8%) cases respectively. Most of study population of road traffic accidents belonged to urban population. Demographic characteristics of study population are shown in table I. Month wise distribution of study subjects is shown in graph I. Peaks of study subjects were observed during the months of May, June and August.

Road traffic accidents were noted in 549 (50.5%), remaining cases belonged to social quarrels, assaults, fire arm injuries, falls and snatching at gunpoint. Fire arm injuries were noted in 57 (5.24%) of cases. Causes of limb injuries are summarized in table II. Distribution of bone and tendon injuries is shown in table III. Most frequent fractured bones were tibia ($n=197$), tibia+fibula ($n=188$), and Radius+Ulna ($n=105$). Tendon injuries were noted in 80 (7.35%) of cases. Limb bone injuries are depicted in graph II also.

Medico legal aspects of limb injury cases are shown in table IV. Of 1087, 1014 (93.2%) were non medico legal cases. 73 (6.7%) of cases were medico legal, of which 50 were accidental and 23 were homicidal.

Table-1 Demographic Characteristics of Study Population ($n=1087$)

Variable	No. of cases	%
Age		
- 18-19.9 years	123	11.3 %
- 20-29.9 years	346	31.8 %
- 30-39.9 years	411	37.8 %
- 40-49.9 years	142	13.0 %
- ≥ 50 years	65	5.90 %
Male (M)	901	82.8 %
Female (F)	186	17.1 %
Social class		
- Lower class	345	31.7 %
- Middle class	567	52.1 %
- Upper class	175	16.0 %
Rural	297	27.3 %
Urban	790	72.6 %

Table-II Causes of Limb Injuries (n=1087)

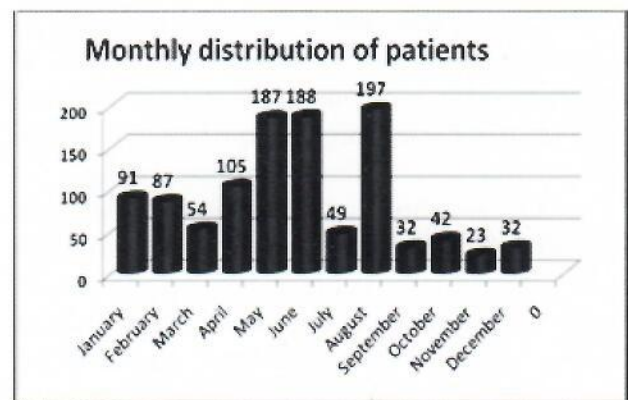
Nature of Cause	No. of Cases	%
Road traffic accidents <ul style="list-style-type: none"> • Motor bike • Motor Vehicle • Pedestrians • Bicycle 	223 199 116 11	20.51% 18.30% 10.67% 1.01%
Social quarrels/assaults	307	28.24%
Fire arm injury	57	5.24%
Snatching at gun point	45	4.1%
Fall	29	2.6%

Table-III Bones & Tendon Injuries of Limbs Involved (n=1087)

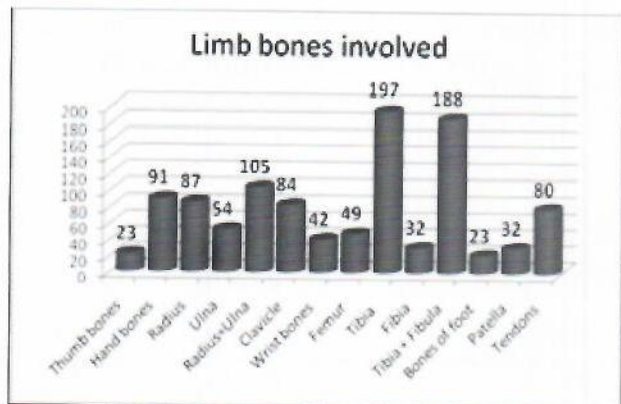
Site	No. of Cases	%
Tibia	197	18.1%
Tibia + Fibula	188	17.2%
Radius + Ulna	105	9.6%
Hand bones	91	8.3%
Radius	87	8.0%
Clavicle	84	7.7%
Tendons	80	7.3%
Ulna	54	4.9%
Femur	49	4.5%
Wrist bones	42	3.8%
Fibula	32	2.9%
Humerus	32	2.9%
Bones of foot	23	2.1%
Thumb bones	23	2.1%

Table-IV Medicolegal Aspects of Limb Injuries (n=1087)

Aspects of Injury	No. of Cases	%
Non Medicolegal Cases	1014	93.2%
Medicolegal Cases	73	6.7%
* Accidental	50	68.4%
* Homicidal	23	31.5%



Graph I. Bar Chart Showing Monthly Distribution of Patients (n-1087)



Graph II. Bar Chart Showing number of bone involved in Limb Injuries (n=1087)

DISCUSSION:

Present study was a retrospective study conducted to evaluate causes, pattern, types of limb injuries and its medicolegal aspects. Mean±S.D age was noted as 39±11.5 years and most of cases belonged to 3rd and 4th decades. Findings are highly comparable to previous studies.⁷⁻⁹ Peaks of study subjects were observed during the months of May, June and August as shown in graph I.

Of total 1087, 901 (82.8%) were male and 186 (17.1%) were female (p=0.0001). The findings are consistent with previous studies^{10,11}. Reason is clear that the male are often doing outdoor jobs and duties hence prone to such type of injuries.^{10,11}

Road traffic accidents (RTA) were noted in 549 (50.5%), remaining cases belonged to social quarrels, assaults, fire arm injuries, falls and sport injuries. Fire arm injuries were noted in 57 (5.24%) of cases. High incidence of RTA is consistent with previous studies^{12,13}. A previous study¹ had reported high frequency of RTA as cause of limb injuries similar to present study.

Overloading of the motorcycles and disregard for traffic regulations are common cause. Of note is the finding that most of those who sustain limb injuries in these motorcycle crashes are the motorcyclist themselves. Findings are consistent with previous study in which most of the victims of motorcycle crashes were childhood pedestrians.¹⁴

Distribution of bone and tendon injuries is shown in table III. Most frequent fractured bones were Radius+Ulna (n=105), tibia (n=197) and tibia+ fibula (n=188). Tendon injuries were noted in 80 (7.35%) cases. Limb bone injuries are depicted in graph II also.

The occurrence of fracture as the commonest injury sustained in this study is an indication of the severity of the limb injuries. Fracture of the tibia/fibula (combined) and tibia were the most common as shown in table III. The finding is consistent with previous studies.^{1,15} Fracture of the humerus accounted for 32 (2.9%) of all fractures in this study. High incidence of open fractures was consistent finding with previous studies.^{1,15} This may be due to significant involvement of motorcyclists in the causation of these injuries as well as the high affectation of the tibia which is largely subcutaneous.

Medico legal aspects of limb injury cases are shown in table IV. Of 1087, 1014 (93.2%) were non medico legal cases. 73 (6.7%) of cases were medico legal, of which 41 were accidental, 23 were homicidal and 9 were of suicidal nature. Fire arm injuries are consistent with previous studies.^{1,9} Present study has limitation like retrospective design of study but reveals patterns of injury and bones involved. Study may prove helpful in making guidelines which are already present but traffic laws are not imposed and moreover disregarded by public.

CONCLUSION:

Accidental limb injuries were common particularly among young adult male and commonly by motorcyclist. Fire arm injuries of homicidal nature were also noted. Public must realized to abide by the rules of traffic.

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