

Audit of Trauma Presenting in Surgical Emergency Allied Hospital Faisalabad

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ABSTRACT

Background: Trauma is study of medical problems associated with physical injury. There are different causes of trauma including road traffic accidents, burns, fight and violence, animal bites, machine injuries, fall from heights and other objects etc. Trauma is on rise day by day due to increase in population, vehicles, intolerance and industrialization. Trauma contributes more than 50 % workload of surgical emergency and most of trauma is due to preventable causes. **Objective:** The objective of this study is to highlight the burden of trauma in surgical emergency and to discuss main causes of trauma. **Study Design:** Prospective descriptive study. **Settings:** Surgical Emergency Allied Hospital, Faisalabad Pakistan. **Duration:** 01-08-2017 to 31-10-2017. **Methodology:** A pre-organized data sheet was prepared for each patient admitted in surgical emergency Allied Hospital Faisalabad with history of trauma. The record of patient, date of admission and mechanism of trauma were noted. This data was segregated into different groups according to cause of trauma. **Results:** Total number of patients admitted in surgical emergency Allied Hospital Faisalabad from 01-08-2017 to 31-10-2017 was 22320. Out of these 13860 patients were admitted due to trauma which accounts 62% of total admission. The mean age of patients admitted with trauma was 27.2 years with minimum age 9 months, and maximum age 61 years. Most of patients were young between ages of 15 years to 46 years. Male were affected more than female with ratio of 8:1. Commonest type of trauma was RTA 59.6 % followed by trauma due to fall 18%. **Conclusion:** Major work load in surgical emergency is due to trauma accounting for 62% of total admissions. Road traffic accidents are commonest form of trauma which is avoidable and preventable most of times. Motorcycle accidents are most common cause of road traffic accident. **Keywords:** Trauma, Road traffic accidents (RTA), Fire arm injuries.

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Submitted for Publication: 01-07-2019

Accepted for Publication: 18-09-2019

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Citation: Yaqoob M, Randhawa SR, Akram M, Irfan S, Ahmad B, Sajid M. Audit of Trauma Presenting in Surgical Emergency Allied Hospital Faisalabad. APMC 2019;13(3):201-5.

INTRODUCTION

Trauma is defined as study of medical problems associated with physical injury. Trauma may be as small as abrasion to head injury. Serious trauma may claim life or limb of person. Trauma is major cause of mortality and morbidity especially in younger age group.¹ Most deaths occurs in initial two hours, trauma patient needs immediate attention, quick evaluation, investigation and early intervention to save life and avoid disability.² Trauma patients are dealt according to ATLS (Advanced Trauma Life Support) protocols. CT scan is a superior imaging tool for the detection of Blunt abdominal trauma compared to FAST. However, the patient needs to be hemodynamically stable for CT to be performed.³ Many efforts have been made to reduce trauma related mortality and morbidity. ATLS is one of those. All over the world about 16000 persons die due trauma related causes daily and 5.8 million deaths occur annually due to trauma.⁴ Due to increased use of vehicles road traffic accidents are major cause of trauma.⁵ Trauma is commonest cause of hospital admission in surgical emergency ward. Many of these patients need long term rehabilitation due to residual disabilities. Road traffic accidents is second commonest cause of disability in developing countries.⁶ All over the world approximately 1.2 million persons die and 50 million injured in road traffic accidents annually.⁷

According to the World Health Organization (WHO) report road accidents will become the fifth major cause of deaths by 2030.⁸ Trauma has become the third cause of death in China following stroke and coronary heart disease.⁹ Pakistan is first in term of number of road accidents in Asia. At least 51400 people were killed in 97500 road accidents in ten-year period from 2004 to 2013. On an average 15 people died every day in road traffic accidents. WHO had also predicted that road accidents were claiming 30,310 lives in Pakistan annually. Approximately 20 people out of 100,000 die in road accidents in a year. Punjab has proven to have the highest road accident deaths, followed by Sind, KPK and Baluchistan.¹⁰ Statistics show that traffic accidents are the leading cause of deaths among people with ages ranging from 15 to 30 in Pakistan. [Dunya News Kamran Khan k Sath] Domestic trauma including fall from stairs, slipping on wet places, burns in kitchen, minor or major cuts are also major health issues. Industrial and farm related trauma like machine injuries, chemical burns and TOKA INJURIES although not so uncommon¹¹ and has high morbidity and mortality. Dog bite injuries are usually under estimated. Dog bite injuries are significant health problem and due to fear of rabies every patient with dog bite gets antirabies vaccination, thus having significant financial burden as well.

Firearm injuries are also on rise. There is shift of firearm injuries from enmity to dacoity.

These cases are just iceberg because only serious or referred cases present in tertiary care hospitals. Most of cases of trauma are dealt at primary or secondary health care facilities which are not included in this study. According to world health report 2002 trauma accounts for 12.2% of total burden of disease. Although a major health issue very little has been written about trauma in Pakistan. This study conducted to describe different major causes of trauma in patients attending surgical emergency Allied Hospital Faisalabad.

METHODOLOGY

Study Design: Prospective descriptive study.

Settings: Surgical emergency Allied Hospital Faisalabad Pakistan.

Duration: 01-08-2017 to 31-10- 2017.

Sample Technique: Simple random sampling.

Sample Size: Number of patients was 22320.

Inclusion Criteria: All patients presenting with different kind of trauma like road traffic accidents, fall from height or level ground, sport trauma, machine injuries either industrial or farm, different type of burns, etc. were included in study.

Exclusion Criteria: Patients with non-traumatic wounds like surgical wounds and received dead were not included.

Methods: A clinical proforma was designed and all information was recorded in it. This included patients bio-data (name with father / husband name, age, sex, address,), date of admission, hospital registration number, cause of trauma. All these patients were dealt as per ATLS protocol. Patients were triaged as following

- Triage priority 1. patients with airway, breathing or circulatory compromise and head injury with GCS<8
- Triage priority 2. Patients with stable airway, breathing and circulation with long bone fractures, dislocations, stable abdomeno-thoracic injuries, head injuries with GCS 9 or more.
- Triage priority 3. Hemodynamically stable patients with minor trauma.

Patients with minor trauma were discharged after doing antiseptic dressings. Patients requiring observation, further investigations, or major surgical intervention were admitted and dealt accordingly.

All collected data was analyzed using the statistical package for social scientists (SPSS).

RESULTS

Total number of patients admitted in surgical emergency Allied hospital Faisalabad from 01 .8 .2017 to 31.10 2017 was 22320. Out of these 13860 patients were admitted due trauma which accounts 62% of total admission.

The socio-demographic characteristic of 13860 patients presenting in surgical emergency Allied hospital Faisalabad was analyzed. Their mean age was 27.2 years with range minimum 9 months to maximum 61 years. Male were more affected than female with 8:1 ratio. Commonest mode of trauma was road

traffic accidents accounting to 59.6 %. Fall either from stairs, roof, work places or slippage on wet floor was second common cause accounting to 18%. Fights including firearm injuries 5.7%, dog bite 3.7%, Burns either scalding burn, flame burn, chemical burn, electric burn 3.1%. Machine injuries either industrial or farm accounted for 2.9% of total trauma patients. Other miscellaneous injuries like injuries during playing, jogging, accidental cut injuries etc. were 7% of total trauma.

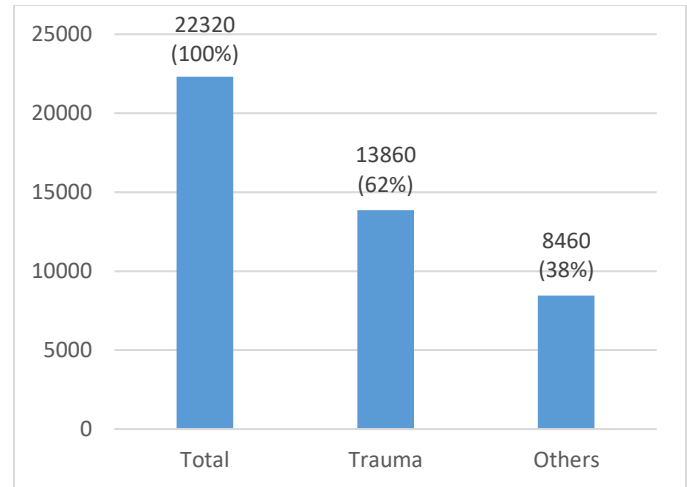


Figure 1: Percentage of trauma among total number of emergency admission

Table 1: Distribution of Trauma

RTA	Dog Bit	Fall	Misc.	Fight	Burn	Machine Injury	Firearm injury
8260	512	2495	970	748	430	402	43
59.6%	3.7%	18%	7%	5.4%	3.1%	2.9%	0.31%

Total number of cases = 13860

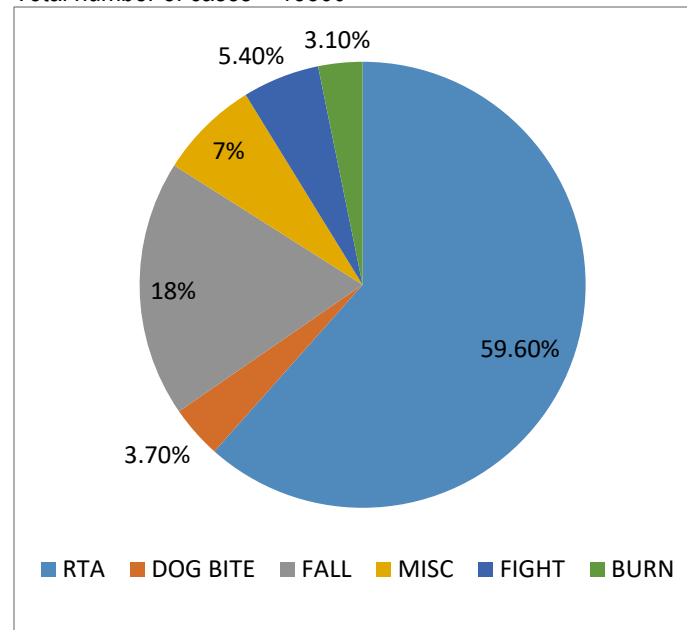


Figure 2: Percentage of Trauma



Figure 3: Victim of Burn



Figure 6: De-gloving injury of lower limb



Figure 4: disarticulation after RTA



Figure 5: Amputation after RTA

DISCUSSION

Trauma is acknowledged as life-threatening “modern disease”.¹² Due to better economic conditions there is increase in number of automobiles and expansion of industries there is increase in incidence of trauma victims.¹³ Accidents and injuries are on rise all over the world. Trauma can happen anywhere, anytime and at any age.¹⁴ It occur frequently in young age with mortality rate of 10 % worldwide.¹⁵ There is an epidemic of road traffic accidents and is second to infectious diseases as medical problem.¹⁶ Trauma not only claims life of person but many a times it leads to permanent disability thus putting more economic burden not only on family but society as well.¹⁷ Chandra et al also described trauma as leading cause of death and disability in India.¹⁸

This study was planned to describe pattern of different type of injuries in patients of trauma presenting in surgical emergency Allied Hospital Faisalabad.

The socio-demographic characteristics of patients show that most of trauma victims are young with average age of 27.2 years. These findings are similar to study of Hokkam et al¹⁵ who state that most of people with trauma were young between 18 to 30 years. These findings are also in accordance with the study performed by Zia N et al in which average age was 28 years and more than 70 % were between 19 to 45 years.¹⁹ Annu Babu et al also declared 78.6% male predominance in trauma.²⁰ In contrast to most of chronic ailments which mainly occur in old age, trauma victims are mainly young and productive people of society.²¹

According to our study male are more victims of trauma than females with male to female ratio of 8:1. These finding are consistent with other studies such as Zia et al who reported that male gender is more victims of trauma(about 80 %).¹⁹ It is due to reasons that male have to travel for jobs, male mostly drive vehicles, or other works to earn bread and butter, similarly male mostly doing labor are prone to trauma.

Road traffic accidents were commonest form of trauma in this study accounting to 59.6% of total trauma. These findings are lower to study of Abhilash KP et al¹³ which state that 65% of total trauma was due to road traffic accidents. It may be due to the

fact that road traffic accident victims which do not need specialized care are dealt at peripheral hospital. In another study conducted in India declared RTAs as leading cause of trauma accounting up to 43% of admissions.²⁰

Most of RTAs were due to motorcycle accidents. It is because motorcycle is commonest vehicle used, bikers do not follow traffic rules, crossing from wrong side, over speeding, using mobile phones during driving, and unsafe condition of roads prone motorcyclists to accidents. Surendra et al described motorcycle (Two Wheels vehicles) as the commonest mode of Transport (42%) involved in RTAs.²² In order to reduce number of road traffic accidents we will have to improve road safety, strict compliance of traffic rules, and to change casual attitude of people using vehicles. this can add to decrease the trauma load in addition to decreased economic burden in developing countries.

Second common cause of trauma in our study was trauma due fall accounting to 18% of total trauma. These findings are consistent with findings of Abhilash KP et al¹³ which state that fall on ground, fall from height are second most common cause of trauma. AnnuBabu et al also declared falls as second commonest cause accounting upto 27%.²⁰

Fight including firearm injuries was third common presentation of trauma in this study accounting to 5.7% of total trauma patients. Poverty, illiteracy, intolerance, psychological upsets are main reasons of fights in our society.

Burns either thermal, chemical or electric was 3.1% of total trauma. Our study has lower rate of burns than study of Onyeannam NE, Kelechi E O which state that burns are one of major causes of trauma and has prolonged hospital stay along with high rate of mortality and morbidity.²³ Burn injuries are not uncommon in our setup as well. Our findings show fewer cases because burn cases are reported more in winter season and this study was conducted in summer season.

Occupational injuries like industrial or farm machine injuries are also significant health hazard. In this study 2.9% of trauma was due to occupational machine injuries.

One thing special for trauma is that it is not only a socioeconomic burden but steals the priority of treatment from other more serious diseases. Trauma patients are usually having minor or major external bleeding which draws the attention of care providers immediately, so due to large number of trauma patients, care providers remain busy in dealing these cases.

Thus, more serious illnesses like peritonitis, intestinal obstruction etc are overlooked. Another issue with trauma is that a large number of attendants sometimes whole village or Mohallah rush to hospital to know the condition of patient, thus creating administrative problems for hospital administration as well. Sometimes these attendants become harsh not only with security personals but also with doctors and paramedics.

Our study elaborates the burden of trauma in surgical emergency in a tertiary care hospital. Many primary and secondary health facilities are not equipped to deal severe cases of trauma, so these patients are referred to tertiary care hospitals. This increases workload in tertiary care hospitals.

CONCLUSION

Our study shows that major workload in surgical emergency is due to trauma accounting for 62% of total admissions. Road traffic accidents are commonest form of trauma which are avoidable and preventable most of times. Motorcycle accidents are most common cause of trauma. By strict enforcement of traffic rules through law enforcing agencies, and public awareness number of accidents can be reduced thus reducing burden not only on hospital emergencies but state economy as well.

LIMITATIONS

In this study we consider only the number of trauma cases and their mechanisms. The outcome of these trauma cases was not assessed as we felt difficulties in retrieving the data of outcome of these cases from their respective wards.

SUGGESTIONS

These studies should be conducted in different districts and local administration along with media should be sensitized to aware the general public and authorities for the gravity of this health problem in our country.

CONFLICT OF INTEREST

The author has no conflict of interest in this study. No funding was involved in this study.

ACKNOWLEDGMENT






We are thankful to the administration of Allied Hospital Faisalabad for helping us to tabulate the data of trauma received in emergency.

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Dr. Muhammad Akram Associate Professor, Surgery FMU / Allied Hospital, Faisalabad	Editing the Manuscript	
Dr. Sofia Irfan Assistant Professor, Surgery FMU / Allied Hospital, Faisalabad	Tabulation of Results	
Dr. Bashir Ahmad Assistant Professor, Surgery FMU / Allied Hospital, Faisalabad	Comparison of Results Review of Statistical Analysis	
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