Review Article

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Clinico-Epidemiological Profile of Blunt Trauma Abdomen Patients in a Tertiary Care Hospital: An Observational Study

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Abstract

Background: Trauma is the leading cause of death in the population under the age of 45 year sold.[1] Among trauma cases, Abdominal trauma accounts for the third most commonly injured part of the body. With the rising trend of road traffic accidents, the clinical patterns and profile of blunt abdominal trauma patients is also changing.

Aim: To access the incidence, mode of injury and clinical presentation of blunt abdominal trauma patients in order to access the problem size in the study area.

Material and Method: A prospective descriptive type of study was conducted in a tertiary care hospital including 100 study participants. All the patients with the diagnosis of the blunt abdominal trauma were assessed clinically at the time of presentation. After obtaining written informed consent, the detailed information regarding the mode of injury, clinical presentation was collected and recorded.

***Data Analysis*:** The data collected were then entered in MS Excel sheet and was analysed using SPSS v 20.0. the data was presented in the form of numbers and proportions.

***Results and conclusion*:** 85% of participants were male, majority (55%) belong to 21-40 years age group. The most common mode of injury was Road traffic accidents (75%) and most common clinical presentation was pain abdomen (98%). Spleen was the most common solid organ involved.

Keywords: Abdominal trauma; Road traffic accidents; Clinical presentation; Descriptive study.

INTRODUCTION

Trauma is a major health problem in our country accounting for around 8%of deaths per year. Every year in India, about 1,40,000 individuals di in accidental deaths and approximately double the numberare disabled. Trauma is the leading cause of death in the population under the age of 45 years old.[1]

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Among trauma cases, Abdominal trauma accounts for the third most commonly injured part of the body. Abdominal trauma could be of two types penetrating and blunt. Penetrating abdo minal trauma is easily diagnosed and timely managed whereas blunt abdominal trauma is often missed due to lack of reliable clinical signs which pose higher risk of morbidity and mortality.

Countries across the world are going through majorur banization, motorization, industrialization and alterationin the socioeconomic values. Due to these changes, road traffic accidents have become the most important public hazard in the world, resulting none of the largest threats agains thuman lives and safety.[2] With this rising trend of road traffic accidents, the clinical patterns and profile of blunt abdominal trauma patients is also changing.

Studies evaluating the clinical profile and patterns of blunt abdominal trauma were relatively scarce in the study area. Hence this study was planned with an objective to access the incidence, mode of injury and clinical presentation of blunt abdominal trauma patients in order to access the problem size in the study area.

METHODS

Study design: Prospective descriptive type of study.

Study area: A tertiary care hospital.

Sample size: A total of 100 participants were included in the study.

Inclusion criteria

1. All patients with blunt abdominal solid organ trauma.
2. Patients presenting with in 48 hours of trauma

Exclusion criteria:

1. Penetrating abdominal injury
2. All death son arrival
3. Patients of blunt trauma abdomen hollow viscera injury with out solid organ injury
4. Pregnant females
5. Pediatric patients

Data Collection

All the patients with the diagnosis of the blunt abdominal trauma were as sessed clinically at the time of presentation. Primary survey and Initial resuscitation was done in all cases as per latest ATLS guidelines. After obtaining written informed consent, the detailed information regarding the mode of injury, clinical presentation was collected and recorded.

Data Analysis

The data collected were then entered in MS Excel sheet and was analysed using SPSS v20.0. the data was presented in the form of numbers and proportions.

OBSERVATIONS

In the present study a total of 100 participants with blunt abdominal trauma were included. It was observed that majority (85%) of participants were male. According to the age group it was observed that majority (55%) were in 21-40 years of age group followed by 21% in 41-60 years age group. Regarding the mode of injury it was observed that 75% of patients had suffered injuries due to Road traffic Accidents (RTA) and almost similar number of participants i.e., 13% and 12% had suffered fall and assault respectively (Table 1).

Table 1: Distribution of study participants as per demographic status and mode of injury.

Variable	Number (%)
Gender	
Male	85 (85%)
Female	15 (15%)
Age group	
18-20 years	18 (18%)
21-40 years	55 (55%)
41-60years	21 (21%)
>60 years	6 (6%)
Mode of Injury	
RTA	75 (75%)
Fall	13 (13%)
Assault	12 (12%)

Regarding the clinical presentation of cases, it was observed that abdominal pain was most common clinical presentation (98%), followed by abdominal tenderness in 74%, Abdominal distention (48%), tachycardia (43%). Hematuria was least reported (3%). Almost similar number of patients reported altered sensorium and ENT bleed i.e., 6% and 5%

respectively (Fig. 1).

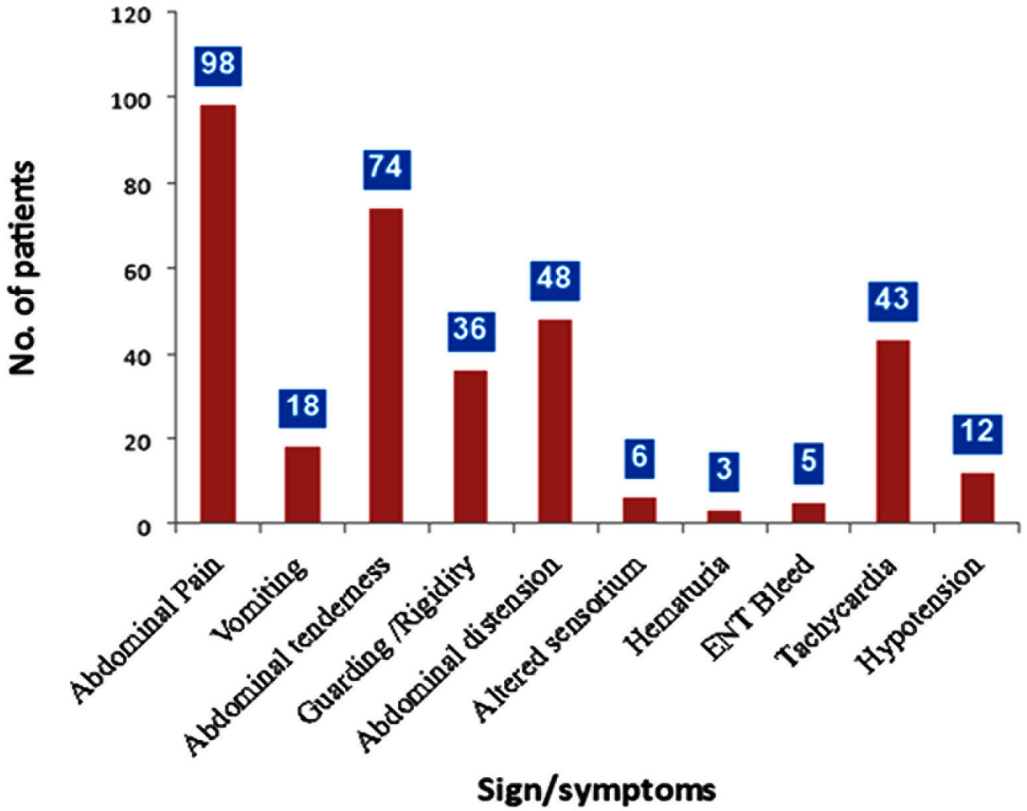


Fig. 1: Clinical presentation of Blunt Abdominal Trauma patients

On evaluation of patients with e FAST, it was observed that majority (48%) of patients had mild free fluid. Almost similar number of participants i.e., 21% and 20% had minimal and moderate free fluid. Regarding solid organ involvement, most common solid organ involved in blunt trauma was spleen (48%), followed by Liver (42%), pancreas was least commonly involved organ (Table 2).

Table 2: Distribution of study participants according to radiological findings (N=100)

Variable	Number (%)
e-FAST findings	
No free fluid	11 (11%)
Minimal free fluid	21 (21%)
Mild free fluid	48 (48%)
Moderate free fluid	20 (20%)
Solid Organ involved	
Spleen	48 (48%)
Liver	42 (42%)
Kidney	4 (4%)
Pancreas	3 (3%)
Liver + spleen	3 (3%)
Grade of Injury	
I	32 (32%)
II	41 (41%)
III	23 (23%)
IV	5 (5%)
V	2 (2%)

On CT scan evaluation it was observed that 41% of patients had Grade II injury, followed by 32% with Grade I injury, whereas only 2% of patients had Grade V injury (Table 2).

Regarding other injuries associated with blunt trauma abdomen, it was observed that 63% patients had some other associated injury. Among patients with some other associated injuries, maximum (40%) had chest injuries, followed by head injury in 23.8%, whereas maxillofacial injuries were reported

least (Fig. 2).

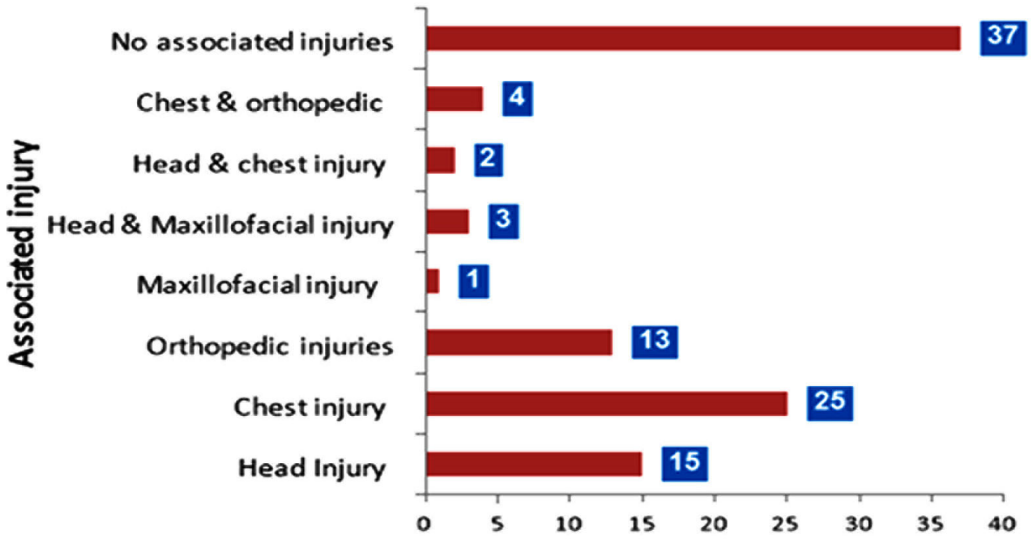


Fig. 2: Distribution of patients according to injuries associated with blunt trauma abdomen

DISCUSSION

The present study involved 85% male participants and 15% female participants with male to female ratio 5.6:1. The result of this study was similar to study conducted by Ramchandra ML[3] et al, Chandar Agrawal et a[4], Baldiwala AS et al[5] and VN Prashanth et al[6] where also male patients constituted maximum proportion of cases. This similarity could be due to the reason that males are involved more in outdoor activities, assault, driving and violent crimes as compared to females.

The most common affected age group in the present study was 21-40 years of age and mean age of study participants was 32.59 years. This was found to be similar in study conducted by Chandar A et al[4] and H.A. Panchal[7] where mean age reported was 34.20 years and 31.48 years respectively. This similarity could be due to the reason that People from the age group 21to 40 are economically productive people; they tend to travel more for the office, business or study purpose so they are more liable to RTA and other trauma. Another possible reason is people from 21 to 40 years are more involved in rash driving, driving under alcohol influence, crime and assaults.

The most common mode of injury in the present study was Road traffic Accident i.e., 75%. The findings were comparable to study conducted by Verma S et al[8] and J. Davis et al[9] which reported RTA as 75% and 70% respectively. The most common solid organ to involve during trauma was observed to be spleen (48%), followed by Liver (42%) in the present study. The findings were comparable to study conducted by Baldiwala AS et al[5] and Mehta N et al[10] where also spleen was most common organ involved.

Regarding the associated injuries it was observed that chest injuries were most commonly (29%) associated with blunt abdominal trauma. The finding was comparable to study conducted by Mehta N et al[10] and Davis j et al[9] where also most common associated injury was chest injury.

REFERENCES

1. Soto JA, Anderson SW. Multi detector CT of blunt abdominal trauma. Radiology .2012Dec;265(3):678-93.
2. Aubakirova A, Kossumov A, Igissinov N. Road traffic accidents in Kazakhstan. Iranian journal of public health.2013;42(3):231.
3. Ramachandr ML, Krishna SR. Solid organ injury in blunt trauma abdomen: an etiological evaluation and success rate of non - operative management .International Surgery Journal.2018 Mar23;5(4):1350-3.
4. Agrawal C, Jindal R, Mukherjee S. A Clinical Study of Blunt Trauma Abdomen with Respect to Management and Outcomein a Tertiary Care Hospital.
5. Baldiwala AS, Lad VC. Management of solid organ injury in patient of blunt abdominal trauma. International Surgery Journal.2021Jul28;8(8):2361-5.
6. V Nandhana Prashanth, B Kanchana, Vivekananda S Nathan. Analysisof visceral injuries in blunt abdomen trauma. Med Pulse – International Medical Journal. February2016;3(2): 222-225.
7. Panchal HA,Ra manuj AM. Thestudy of abdominal trauma: patterns of injury, clinical presentation, organ in volvementand associated injury. International Surgery

Journal.2016Dec9;3(3):1392-8.

8. Verma S, Noori MT, Garg P, Yadav A, Sirohi V, Garg N. Study of pattern and management strategies of solid visceral injuries in blunt trauma abdomen in tertiary care centre. International Surgery Journal.2020May26;7(6):1808-12.
9. DavisJJ, CohnJrIS, Nance FC. Diagnos is and management of blunt abdominal trauma. Annals of surgery.1976Jun;183(6):672.
10. Mehta N, Babu S, Venugopal K. An experience with blunt abdominal trauma: evaluation, management and outcome. Clinics and practice.2014Jun18;4(2):599.