



## Study of Clinical Profile of Blunt Abdominal Trauma at a Tertiary Health Care Centre in Central India

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### Abstract

**Objective:** To Study of Blunt Trauma Abdomen in Index Medical College, Hospital and Research Centre, Indore, M.P. which is a leading tertiary care centre in Central India.

**Method:** All admitted patients of Blunt Abdominal Trauma were included in the study.

Total number of 53 patients were studied, available data was tabulated and statistically analysed by standard methods of percentages. The study was concluded by comparison of observations with other available data.

**Conclusion:** Majority of patients were young between the age of 10 to 30 years accounting for 54.71 % of the cases. Male Preponderance was seen accounting for 81.13% of the cases. Road traffic accidents were the most common cause of the injuries. In the present study 75.47% of the cases were the victims of road traffic accidents. Average duration of hospital stay was 14 days and median stay was 12 days.

Operative treatment was needed in 23 out of 53 (43.99%) with satisfactory outcome. Nine out of fifty three patients (16.98%) died due to their injuries or postoperative complications. Incidence and mortality of blunt abdominal trauma could be reduced by increasing the standards of road safety and awareness of safe driving.

**Keywords:** Blunt Abdominal, Trauma & Injury.

### Introduction

This Observational study was conducted on the victims of Blunt Abdominal Trauma from July 2017 to December 2018 at IMCHRC, Indore

which is a leading Tertiary Health Care Centre in Central India.

53 patients of Blunt Abdominal Trauma were included in the study and analysed on the basis of

Clinical Profile, Demographic Pattern and Overall outcomes of the injury.

Road traffic accident was the commonest cause (74.47%). sex distribution ratio showed male preponderance (81.13%). More than half (55%) were from the middle age group (20 to 40 years). These men must have been the Sole Breadwinners of their families and we can only imagine the Socio-economic impact on their families. Most of them were involved in automobile accidents which could have been prevented. Increased use of fast moving vehicles and lack of knowledge about traffic regulations are responsible for these accidents. In the coming days, the problem of polytrauma is going to increase in our hospitals. We should try to prevent the menace of automobile accidents.<sup>[1]</sup>

Rules and Regulations of road safety and precautions while using the Automobiles have to be imbibed at an earlier age. Schools, Social Media and Licensing authorities of the Government will have to play an important role in this matter.<sup>[2]</sup>

In spite of latest gadgets and State of the art medical care facility, the outcome of abdominal trauma is marked by significant Morbidity and Mortality as it depends on Concomitant Injuries and Unique problem of Postoperative Sepsis. We feel that proper understanding of Etiology and pattern of Blunt Abdominal Trauma may help in improving the final outcome.<sup>[3,4]</sup>

### Aims and Objectives

- Observational Study Of Blunt Trauma Abdomen In Index Medical College, Hospital And Research Centre , Indore, M.P. Which Is A Leading Tertiary Care Centre In Central India.
- To Study And Analyse The Patients Of Blunt Abdominal Trauma On The Basis Of Clinical Profile, Demographic Pattern And Overall Outcomes Of The Injury.

**Study Design:** Observational Study

### Material and Methods

This Observational Study was conducted carried out in Index Medical College, Hospital and Research Centre, Indore, M.P. (India) From July 2017 to December 2018.

All Admitted Patients of Blunt Abdominal Trauma were included in the study.

Patients who left against medical advice without completing the Treatment were not included in the study.

Detailed history, findings of a thorough Physical Examination, Relevant Investigations were entered in the Proforma of the study, Patients were managed either conservatively or operated as per the Clinical Diagnosis. Data pertaining to the Patients from the Date of admission to the date of Discharge from Hospital were entered in the Pro forma. All The records were entered on a master chart format.

Total Number of 53 patients were studied, available data was tabulated and statistically analysed by standard methods of percentages. The Study was concluded by comparison of observations with Other available data.

### Observation

In our study, the median age of the victims of Blunt Abdominal Trauma was found to be 25 years.

18 patients out of the total 53 (33.96%) were from the age group of 21-30 years and were the commonest.

Half of the patients (54.71%) were from the second and third decade of life.

This further proves that the young people are vulnerable to Blunt Abdominal Trauma.

**Table 01:** Age Distribution of the Patients and Percentage

Age (In Years)	Number of Patients	Percentage
0-10	10	18.86
11-20	11	20.75
21-30	18	33.96
31-40	7	13.20
41-50	3	5.66
51-60	4	7.54

**Table 02:** Sex Distribution of Patients and Percentage

Sex	Number of Patients	Percentage
Male	43	81.13
Female	10	18.86

**Table 03:** Mode of Injury of Patients

Mode of Trauma	Number of Patients	Percentage
Road Traffic Accident	40	75.47
Fall From Height	5	9.43
Assault	4	7.54
Fall of Object/Wall	4	7.54

**Table 04:** Patients with Associated Injuries

Associated Injuries	Number of Patients
Head Injury	3
Fracture of Spine	1
Fracture of Pelvis	5
Fracture of Rib Cage With Pulmonary Complications	4
Fracture of Long Bones	6

**Table 05:** Pattern of Visceral Involvement

Organ Involvement	Number of Patients
Small Bowel - Duodenum	2
- Jejunum	12
- Ileum	5
Liver	18
Spleen	9
Stomach	6
Kidney	3
Urinary Bladder	3
Colon	2
Retroperitoneum	2
Pancreas	1
Diaphragm	1

According to the data, Small Bowel (19), Liver (18) and Spleen (9) were the commonest organs which suffered injury in case of blunt abdominal trauma. Out of the 53 patients, 22 patients were managed conservatively and remaining 31 patients were operated.

**Table 06:** Post Operative Complications in Blunt Abdominal Trauma

Post Operative Complications	Number Of Patients
Acute Respiratory Distress Syndrome	4
Acute Renal Failure	1
Septicaemia	2
Fecal Fistula	2

**Table 07:** X-Ray and Contrast Enhanced Computed Tomography Findings Relating to Small Bowel Injuries In Blunt Abdominal Trauma

Finding	Number of Patients
Perforation With Peritonitis	9
Perforation Without Peritonitis	3
Peritonitis Alone	3
Small Bowel Ischaemia	4

**Table 08:** Incidence of Various Clinical Features in Patients of Blunt Abdominal Trauma

Clinical Features	Total Number of Patients	Percentage
Pain	49	92.45
Vomiting	20	37.73
Distention	30	56.60
Guarding	31	58.49
Rigidity	28	52.83
Tenderness	51	96.22
Absent Bowel Sound	24	45.28
Hypotension	9	16.98

OUT of the 53 patients, pain (92.45) and the tenderness (96.22) over the abdomen were the most common features. Other features were guarding (58.49), distention (56.6), rigidity (52.83), absent bowel sounds (45.28) and vomiting (37.73).

Only nine patients (16.98) were presented with hypotension.

**Table 09:** Duration of Hospital Stay

Days	Number of Patients	Percentage
1-10	24	45.28
11-20	17	32.07
21-30	6	11.32
31-40	4	7.54
41-50	1	1.88
>51	1	1.88

Average duration of hospital stay was 14 days while the median stay was 12 days. Hospital stay directly indicates the magnitude of Trauma a patient has suffered. It is observed that hospital stay increases with complications either related to the Post Operative Sequale or the associated injuries, such as major surgery.

**Table 10:** Outcome of Blunt Abdominal Trauma

Category	Number of Patients	Percentage
Discharge After Satisfactory Conservative Treatment	21	39.62
Discharge After Operative Treatment	23	43.39
Death Due To Injury	9	16.98

Nine patients of Blunt Abdominal Trauma could not be saved, inspite of all the efforts. Out of the remaining 44 patients, 21 patients were managed conservatively and discharged in a satisfactory condition.

### Discussion

In this study, 53 patients were included of Blunt trauma abdomen admitted between July 2017 to December 2018. The aim of the study was to study the clinical profile, demographic pattern and overall outcomes of the injury.

In this study, it has been seen that the patients (33.96) between 21-30 years were most commonly affected from blunt abdominal trauma. More than one-half of the patients were from the second and third decades of life.

S. Gupta et al in their study of 63 patients had 87% patients below the age of 40 years. Deodhar et al in a study of 51 patients of blunt and penetrating abdominal trauma also found that people in second and third decades are common victims.<sup>[4,5]</sup>

The highest incidence in this age group can be attributed to active life style of this age group with the highest exposure to external environment, use of automobiles, working with machinery, assaults and contact sports.

Male preponderance was noted with incidence of 81.13%. Same findings have been noted by S.Gupta et al, Deodhar et al , M. Mukhopadhyay et al and Devis JJ. et al.<sup>[3]</sup>

Motor vehicle accidents accounted for more than three-fourths (75.47%) followed by Falss (9.43%) , assault (7.54%). S. Gupta et al reported 50% of patients were due to automobile accidents.

Automobile accidents are due to high rate of growth of economy, rapid industrialisation and relatively poor road infrastructure.

In our study, tenderness (96.22%) and pain (92.45%) were the main presenting features followed by guarding (58.49%), Distention (56.60%) and Rigidity (52.83%). S. Gupta et al also reported that in their study, most of the patients presented with the clinical features of pain, tenderness and guarding. Deodhar et al reported in their study of 51 cases that most of the patients presented with guarding and absent bowel sounds.

In our study, out of 53 patients, 21 were treated conservatively and discharged in a satisfactory condition. 23 (43.39%) patients underwent operative treatment and were discharged. 9 out of 53 (16.98%) died inspite of all efforts of treatment. Deodhar SD et al noted 20% mortality in their series of 51 patients of abdominal trauma. S. Gupta et al reported 11.11% mortality in their series of 63 patients.<sup>[4,6]</sup>

Outcome of a victim of blunt abdominal trauma depends on various factors. Morbidity and mortality varies with age, Body Habitus and force & location of Trauma. It also depends on coexisting morbidities of an individual and magnitude of associated injuries, delay in Diagnosis and Treatment, sepsis and respiratory complications increase the mortality. Early recognition and management of associated injuries and complication is of paramount importance in reducing the morbidity and mortality.<sup>[7]</sup>

### Conclusion

In this study, the following inferences were made

- 1) Majority of patients were young between the age of 10 to 30 years accounting for 54.71 % of the cases.
- 2) Male preponderance was seen accounting for 81.13% of the cases.
- 3) Road traffic accidents were the most common cause of the injuries. in the present study 75.47% of the cases were the victims of road traffic accidents.

- 4) Average duration of hospital stay was 14 days and median stay was 12 days.
- 5) Operative treatment was needed in 23 out of 53 (43.99%) with satisfactory outcome.
- 6) Nine out of fifty three patients (16.98%) died due to their injuries or postoperative complications. incidence and mortality of blunt abdominal trauma could be reduced by increasing the standards of road safety and awareness of safe driving.

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