

## **Spectrum of Blunt Abdominal Trauma**

<sup>1</sup>Dr. Kamal Bansal, Assistant professor, General Surgery, S K Medical College, Sikar, Rajasthan

<sup>2</sup>Dr. Rohit Yadav, Assistant professor, General Surgery, S K Medical College, Sikar, Rajasthan

<sup>3</sup>Dr. Vijay Pal Singh, Assistant professor, General Surgery, S K Medical College, Sikar, Rajasthan

**Corresponding Author:** Dr. Kamal Bansal, Assistant professor, General Surgery, S K Medical College, Sikar, Rajasthan

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### **Abstract**

**Background:** This study was conducted to evaluate cases of BAT with special emphasis on study of associated epidemiological factors, clinical profile and management strategies in patients presenting BAT.

**Methods:** Hospital based cross-sectional study conducted at department of general surgery, S K Medical College, Sikar (Rajasthan)

**Results:** Case distribution according to organ involved consisted of 56.00% cases of liver injury, 37.00% cases were of splenic injury, 16.00% patients had ilial injury and Pancreatic injury occurred in 3.00% patient. Based on the type of management done cases were divided as operative and conservative. Operative management was done in 18 patients and 82 patients were managed conservatively.

**Conclusions:** Blunt Abdominal Trauma is one of the important causes of morbidity and mortality in relatively young individuals. Most common mode of injury is road traffic accidents and men are affected predominantly

**Keywords:** Blunt abdominal trauma, Liver injury, Perforation

### **Introduction**

Trauma has become one of the major causes of morbidity and mortality. Rapid industrialization, road traffic accidents (RTA) and accidents in home are major cause of trauma. Abdominal trauma constitutes major portion of surgical emergencies and is the 3rd most commonly injured region following head and chest. Blunt trauma remains the most prevalent mechanism of injury to the abdomen. The patient with BTA needs to be assessed early clinically and radiologically.<sup>1</sup>

In the pre-industrial era abdominal injuries were generally homicidal and hence penetrating in nature but with the advent of mechanics and automobiles, abdominal injuries occur more commonly as accidents and are blunt in nature. In a study shock was itself a grave finding and implies extensive concealed hemorrhage or contamination by gastrointestinal contents or both. Study of 297 showed involvement of more than one intra-abdominal organ occurred in 14% of the patients<sup>2-3</sup>

In view of increasing number of vehicles and consequently road traffic accidents, this study was undertaken to evaluate cases of BAT with special

emphasis on study of associated epidemiological factors, clinical profile and management strategies in patients presenting with BAT.

**Materials & Method**

**Study design:** Hospital based prospective study.

**Inclusion Criteria:** Patients admitted with history of blunt trauma abdomen due to road traffic accidents, accidental falls, trauma by blunt objects and assault

**Exclusion criteria:**

- Associated Orthopaedic Injuries
- Associated With Severe Head Injury
- Associated With Severe Chest Injury
- Pregnancy

After recording vitals and urgent resuscitation, hematology profile was sent for and radiological investigation i.e. x-ray chest, x-ray abdomen and ultrasound were performed. Secondary survey was done which included identification of other associated injuries which could be life threatening and were noted. A clear cut indication of operative management was outlined based either on radiological diagnosis or by means of repeated physical examination.

The intraoperative findings were recorded in the proforma. The patient was assessed for any postoperative complication on the 1st, 2nd, 4th, 7th and 10th day. The progress of the patient or development of any complications, total stay in the hospital and all the mortality were recorded

**Data analysis**

Data was recorded on a Performa. The data analysis was computer based; SPSS-22 was used for analysis. For categoric variables chi-square test will be used. For continuous variables independent samples’s *t*-test was used. *p*-value <0.05 was considered as significant.

**Results**

Table 1: Socio-demographic variable

Variable	
Age in yrs	31.26±14.23 Yrs
Male : Female	86 : 14

Most of patients were young male.

Table 2: Type of Injury

Type of Injury	No of cases	Percentage
RTA	84	84.00
FFH	10	12.00
Assault	3	3.00
Others	1	1.00

Maximum cases (84.00%) were from RTA

Table 3: Organ Involved in Injury

Organ Involved	Total
Liver	56
Spleen	37
Intestine	16
Pancreas	3
Kidney	7
Urinanry Bladder	2
Mesentry	6
Diaphragm	1

Case distribution according to organ involved consisted of 56.00% cases of liver injury,37.00% cases were of splenic injury, 16.00% patients had ilial injury and Pancreatic injury occurred in 3.00%patient.

Table 4: Management

Management	Total
Conservative	82
Operative	18

Based on the type of management done cases were divided as operative and conservative. Operative management was done in 18 patients and 82 patients were managed conservatively

## Discussion

In our study maximum cases were from RTA.

Madhumita Mukhopadhyay et al in their study of 47 patients who underwent laparotomy following intestinal injuries from blunt abdominal trauma over a period of 4 years found that the M:F ratio in this study was 8.4:1<sup>4</sup>

Similarly John L Kendall et al in a retrospective cohort study of 1169 cases of BAT reported that 66% of the affected individuals were Males<sup>5</sup>

Similar Findings were reported by Khanna et al who found that the most common mode of injury in cases of BAT was Road Traffic accidents (57%). In contrast to our study Khanna et al in their study found assault (33%) to be more common than fall from height (15%)<sup>6</sup>

Case distribution according to organ involved consisted of 56.00% cases of liver injury, 37.00% cases were of splenic injury, 16.00% patients had ilial injury and Pancreatic injury occurred in 3.00% patient in our study. There is an increase in trend towards conservative management if the patient is haemodynamically stable. The grade of injury was assessed by USG and CECT and was most of the time managed conservatively. Minor lacerations and capsular tears which are difficult to diagnose clinically can be easily demonstrated in USG and CECT scan and were selected for non-operative management. However the disadvantage of non-operative management is missed injuries resulting in increased morbidity and mortality. Operative intervention is needed in hemodynamically unstable patients who are not responding to aggressive fluid resuscitation and those with significant organ injuries. The common surgeries performed in our patients included splenectomy, primary closure of perforation and resection and anastomosis. Similar surgeries were

required in patients of BAT as reported by Wu CL et al AB<sup>7</sup>

## Conclusion

Blunt Abdominal Trauma is one of the important causes of morbidity and mortality in relatively young individuals. Most common mode of injury is road traffic accidents and men are affected predominantly

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