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## RESEARCH ARTICLE

### STUDY OF ABDOMINAL INJURIES SUSTAINED AFTER ROAD TRAFFIC ACCIDENT- A PROSPECTIVE STUDY

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#### ABSTRACT

**Introduction;** With the modernization and hasty life Accidents are considered as a modern day epidemic. Worldwide one third of trauma patients have abdominal trauma and remains a frequent cause of preventable death. **Materials and Methods;** The present study was carried out in a tertiary care hospital government medical college Srinagar from June 2014 to May 2019. It's a prospective study entitling 677 patients getting admitted in our hospital as a case of isolated abdominal trauma. **Results;** mean age in our study is 29.32, male female ratio of 3.3, injuries sustained were mostly blunt trauma abdomen followed by penetrating injury, more than 90% patients presented with pain abdomen, most common solid visceral injured organ was spleen (19.7%) followed by liver (15%) and About 66.6% of patients were subjected to emergency laparotomies and remaining 33.3% patients were observed and managed conservatively. **Conclusion;** With the modernization and dramatic rise in automobile industries the consequent rise in rate of road traffic accidents is nothing new but an avoidable mishap that if sufferer is mobilized to tertiary care hospital as early as possible will definitely change the prognosis and morbidity.

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#### INTRODUCTION

With the modernization and hasty life Accidents are considered as a modern day epidemic (Hollinshead, 1966). Worldwide one third of trauma patients have abdominal trauma and remains a frequent cause of preventable death. Abdominal trauma is classified either as either blunt or penetrating. In rural areas blunt trauma predominates, while penetrating trauma is more frequent in urban settings (Hemmila & Wahl, 2008). By the year 2020 WHO stated that trauma will become the first or second leading cause of "loss of productive years of life" for both developed and developing countries (Mock, 1998). According to WHO Road traffic injuries are the leading cause of death for children and young adults aged 5-29 years. Abdominal injuries are broadly classified into blunt trauma which are very difficult to diagnose and other is penetrating injuries which are quite evident on examination (Museru et al., 1988).

With the advent of newer diagnostic modalities in radiology the extent and site of abdominal injuries has changed the treatment protocol and the injured organ can be observed over a period of time (Abu-Zidan et al., 1996).

#### MATERIALS AND METHODS

The present study was carried out in a tertiary care hospital government medical college Srinagar from June 2014 to May 2019. It's a prospective study entitling 677 patients getting admitted in our hospital as a case of isolated abdominal trauma. Patients with abdominal trauma due to road traffic accident were first resuscitated according to Advanced Trauma Life Support (ATLS) protocols. Patients were taken into the surgical wards if stable or the intensive care unit (ICU) from where necessary inv. estigations were completed and further treatment was instituted and those in whom surgery is indicated were subjected to surgery in emergency theatre. The parameters evaluated were age distribution, time of injury, sex distribution, presentation, laboratory, radiological parameters and management.

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### Inclusion criteria

- All patients admitted with history of trauma to abdomen after road traffic accident.

### Exclusion criteria

- Patient not willing to get admitted.
- Abdominal trauma associated with other trauma.
- Patients who expired outside the hospital.

**Aim of the study:** To study the pattern of abdominal injuries sustained after road traffic accident and there management.

### Indications for surgical intervention

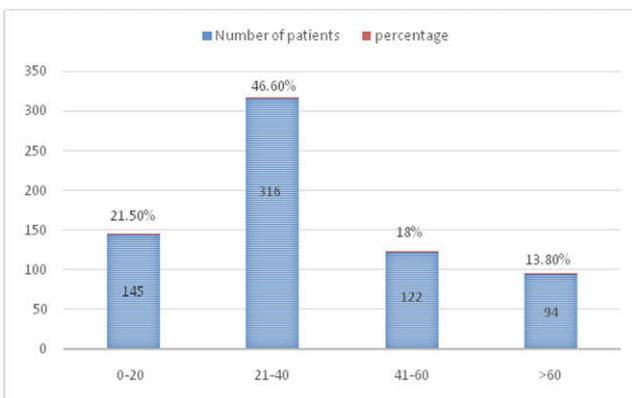
- Hemodynamic instability from suspected intra-abdominal injury after resuscitation.
- Clinical features of peritonitis.
- clinical deterioration while on conservative therapy.
- contrast enhanced enhanced CT scan documented pneumoperitoneum, higher grades of solid visceral injury which demands surgical exploration.

## RESULTS

**Age distribution:** In our study of 677 patients who suffered from road traffic accident we observed most of the patients were falling in the age group of 21-40 years and the least among all were the age group above 60 years. Mean age 29.32

**Table 1. Showing age distribution of patients**

Age group in years	Number of patients	percentage
0-20	145	21.5%
21-40	316	46.6%
41-60	122	18%
>60	94	13.8%



**Figure 1. Showing age distribution of patients**

**Sex distribution:** In our study we found males predominate than females with male female ratio of 3.3 as shown in table-2

**Table 2. Showing sex distribution**

sex	Number of patients
males	521
females	156

**Type of Injury:** In this study of 677 patients the variant of injuries sustained were mostly blunt trauma abdomen followed by penetrating injury. As shown in table 3

**Table 3. Showing type of injury**

Type of patient	Number of patients
blunt	470
penetrating	207

**Chief Complaints:** After sustaining road traffic accident we observed that the most common presentation to accident and emergency department was pain abdomen which contributed to more than 90% of patients

**Table 4. Showing chief complaints of the patients.**

Chief complaints	Number of patients
pain abdomen	635
Penetrating wound	207
vomiting	81
Abdominal distention	169

**Organ wise injuries of patients:** After clinical examination supported by biochemical and radiological investigations we observed that 21.2% (144) patients didn't suffered from any significant intra-abdominal catastrophe and there was only superficial to deep bruises and lacerations, rest of the patients suffered from major intra-abdominal injuries which is shown in table-5

**Table 5. Showing organ injured**

Organ injured	Number of patients
spleen	134(19.7%)
liver	101(15%)
Retroperitoneal hematoma	74(12.4%)
Mesenteric tear	59(8.7%)
intestines	54(8%)
More than organ involved	44(6.5%)
kidneys	34(5%)
Urinary bladder	6(1%)
diaphragm	3(0.5%)
Free fluid in peritoneal cavity without organ injury	24(3.5%)

**Management of patients with abdominal trauma:** Among the patient who were having severe abdominal injuries and were hemodynamically unstable were subjected to emergency surgery. Patients who were having superficial and deep lacerations without intra- abdominal injuries were managed conservatively. About 66.6% of patients were subjected to emergency laparotomies and remaining 33.3% patients were observed and managed conservatively.

Management	number of patients
operative	451
Non-operative	226

## DISCUSSION

This study which was conducted in the department of general surgery smhs Srinagar Kashmir was prospective observational in design. As mentioned in literature more than 60% of blunt trauma of abdomen is caused by road traffic accidents J Amuthan. This study includes all those patients who come to accident and emergency department smhs hospital as a case of road traffic accident with isolated abdominal trauma although this study might underestimate the actual incidence as many of these patients die on the spot and many of these patients are managed at peripheral hospitals. In this study we observed that most of the patients were falling in the age group of 21-40

years (46.6% table and figure-1) and the least among all were the age group above 60 years (13.8%), similar observations were made by Malhotra<sup>7</sup> were they stated that (63.33%) of patients belonging to 11-30 years age group suffered from blunt trauma abdomen due to road traffic accident. In our study we found males predominate than females with male female ratio of 3.3 as shown in table-2 similar results were encountered by Mumtazdin Wani<sup>8</sup> were they found 4.5: 1 male to female ratio. In our study of 677 patients the variant of injuries sustained were mostly blunt trauma abdomen followed by penetrating injury with the ratio of 2.2 (table-3) similar observations were made by Idriss<sup>9</sup> were they had a ratio between blunt and penetrating trauma as 1.77 which is corresponding to our study. After sustaining road traffic accident we observed that the most common presentation to accident and emergency department was pain abdomen which contributed to more than 90% (table-4) of patients which corresponds to study conducted by Shah Y<sup>10</sup> were Most of the patients presented with abdominal pain (91.2%). After clinical examination supported by biochemical and radiological investigations we observed that 21.2% (144) patients didn't suffer from any significant intra-abdominal catastrophe and there was only superficial to deep bruises and lacerations, rest of the patients suffered from major intra-abdominal injuries which is shown in table-5, we analyzed that most common solid visceral injured organ was spleen (19.7%) followed by liver (15%) similar observations were made by Mehta<sup>11</sup> were they found that the most common organ involved after blunt trauma abdomen was spleen (53%) followed by liver (35%). Patients who were having superficial and deep lacerations without intra-abdominal injuries were managed conservatively. About 66.6% of patients were subjected to emergency laparotomies and remaining 33.3% patients were observed and managed conservatively. Various surgical procedures performed were splenectomy, packing of liver, resection anastomosis of gut, repair of injured gut/ mesenteric vessel/diaphragm. Similar observations were made Malhotra<sup>7</sup> et al were (63.33%) patients underwent laparotomy for injuries due to blunt trauma abdomen while 11 (36.67%) patients were managed non-operatively. Other study carried out by Arusu<sup>12</sup> states that they have done splenectomy in 17 cases being the most common surgical intervention followed by primary bowel repair in 6 cases among 59 cases in their study. Mortality in our study was 3% and includes all those patients who got operated and also those who were getting resuscitated after getting admitted.

## Conclusion

With the modernization and dramatic rise in automobile industries the consequent rise in rate of road traffic accidents is nothing new but an avoidable mishap that if the sufferer is mobilized to tertiary care hospital as early as possible will definitely change the prognosis and morbidity.

These patients if not managed properly will definitely prove lethal to the patient, so understanding of hemodynamics, physiology and an experienced trauma surgeon will definitely change the outcome of trauma victims.

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