

FREQUENCY AND PATTERN OF INTRA-ABDOMINAL INJURIES IN PATIENTS
HAVING BLUNT ABDOMINAL TRAUMADr. Mirza Shahryar Baig^{*1}, Dr. Yar Jahan² and Dr. Rehan Ahmad Khan³

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DOI: <https://doi.org/10.17605/OSF.IO/T96EF>

Article Received on 21/08/2020

Article Revised on 11/09/2020

Article Accepted on 01/10/2020

ABSTRACT

Between 1 and 45 years of age, the most common cause of mortality is trauma resulting in the loss of daily activities more than other well-known diseases, such as malignant tumors and cardiovascular diseases. **Objective:** The purpose of this analysis was to determine the pattern and incidence of intra-abdominal injuries in subjects having blunt abdominal trauma. **Study Design:** An Observational Study. **Place and Duration:** In the Surgical Unit of Sheikh Zayed Hospital, Rahim Yar Khan for six months duration from July 2018 to December 2018. **Method:** A total of 50 blunt abdominal trauma cases were included in the study. These cases were over 12 years of age and were of both sexes admitted to the Accidents and Emergency Department of Sheikh Zayed Hospital, Rahim Yar Khan. **Results:** From a total of 50 patients, the males were 41 (82%), and female patients were 9 (18%) included in the study. There were 15 (30%) patients with liver damage, and splenic lesions were noted in 13 (26%) patients. In eleven (22%) patients, there was damage to the intestine varies from the gastric region to the anal canal). In the small intestine, five patients attained injury, and in the duodenum and stomach, two patients were noted with injuries and four patients in the large intestine. In two (4%) cases, there was an injury to the pancreas. The three patients (6%) had Mesenteric tear, and the diaphragm was ruptured in 2 (4%) patients. The retroperitoneal hematoma was noted in five (10%) patients. Three patients (6%) had renal damage, and injury to the bladder was observed in 2 patients. **Conclusion:** It is concluded that intra-abdominal organs are most commonly susceptible to injuries. In the blunt abdominal trauma, the solid organs were injured more. In our analysis of blunt abdominal trauma, the most usual injured organ was the Liver, followed by other organs, including the intestine, spleen, and retroperitoneal hematoma.

KEYWORDS: Intra-abdominal injuries, abdominal trauma.

INTRODUCTION

In this fast-moving world, traffic flow accidents are increasing day by day. The blunt abdomen trauma incidence is peaked because of modern industrial development and automobile industry development due to the rise in explosive compounds manufacture proficient in generating massive compressive forces affecting the humanoid. In 2020, according to WHO, the 1st or 2nd major origin of "loss of productive years" for both under developing or fully established countries will be the trauma.^[1,2] The usual leading cause of death between 1 and 45 years of age is trauma due to RTA, resulting in the loss of daily activities more than other well-known diseases, such as malignant tumors and cardiovascular diseases.^[3] In general, solitary abdominal organ injuries account for ten percent of over-all trauma-related deaths. The leading cause for the rise in morbidity and mortality after blunt trauma to the abdomen due to RTA or any other cause is a postponement in the timely identification of trauma.^[4] Blunt abdominal trauma most usual causes are falls, car

accidents, industrial accidents, and attacks.^[5] In earlier studies, abdominal injuries were usually caused by traffic accidents in 83.6% of cases, including 38.1% were from motorcycle accidents and 45.5% from motor vehicles. Patients with fatal abdominal trauma are higher than penetrating wounds due to a lack of early diagnosis and optimal treatment. Diagnosing a patient with intra-abdominal lesions is much more difficult because examining the abdomen does not consistently categorize all patients with injuries to intra-abdominal organs.^[6] Approximately 13 percent is the intra-abdominal injury prevalence in blunt abdominal trauma patients. It was noted that in blunt trauma to the abdomen, the most injured organ is the spleen concurred about fifty percent of cases.^[7,8]

In contrast, various analyses have testified that the most common organ injured in trauma to the abdomen is Liver and after this is the spleen. Though, these discrepancies have not been resolved till now. Thus, this analysis was held to determine the pattern and frequency of intra-

abdominal injuries in blunt trauma to the abdomen and to relate the data with international and national studies.

MATERIALS AND METHODS

This Observational study was held in the Surgical Unit of Sheikh Zayed Hospital, Rahim Yar Khan for six months duration from July 2018 to December 2018. 50. Total blunt abdominal trauma cases were included in the study. These cases were over 12 years of age and were both sexes admitted to the Accidents and Emergency Department of Holy Family Hospital, Rawalpindi. For patients under the age of 12, numerous injuries and penetrating the abdomen were not included.

All selectees were inquired rapidly by the primary questionnaire to assess the physical state. For intravenous access, two large diameter cannulas (16 meters) are used. The primary replacement therapy for blood loss were colloids and Crystalloid solution. Urethral catheterization and nasogastric tube were passed where necessary or not contraindicated. The patient's second survey was done when stabilized, including head to toe evaluation and detailed history. The investigations like serum electrolytes, serum amylase, complete blood count, blood creatinine and urea level, blood cross-match, x-ray abdomen, pelvis and chest, and pelvis ultrasound and abdomen were done in accident and emergency department.

In some cases, the stable ones underwent diagnostic peritoneal lavage, where other investigations and physical findings were not conclusive. If there was abdominal distention or the patient was in shock, the exploratory laparotomy was done. All findings were

recorded on the designed Performa. Using SPSS 18.0, the data were analyzed.

RESULTS

Fifty total patients with blunt abdominal trauma were included in the study. Forty-one (82%) of the patients were male, and 9 (18%) were female, respectively: In 15 patients 13-25 years was the age range, 26-40 years age range was in 21 subjects, 41-55 years age range in 12 subjects and 56-70 years were two patients. In road traffic accidents, 29 (58%) patients attained injury due to fall 10 (20%) patients, due to violence 8 (16%) patients were injured, and 3 (6%) patients were injured due to industrial incidents. The liver damage was noted in 15 (30%) patients. There were simple grade I or II lesions in 11 (73.3%) patients, grade III in 3 (20%), and liver in 1 (6.7%). Thirteen patients (26%) had splenic trauma, seven patients (53.84%) had grade I injuries, and six patients (46.16%) had grade II injuries. In eleven (22%) patients, there was damage to the intestine varies from the gastric region to the anal canal). In the small intestine, five patients attained injury and, in the duodenum and stomach, two patients were noted with injuries and four patients in the large intestine. In two (4%) cases, there was an injury to the pancreas. The three patients (6%) had Mesenteric tear, and the diaphragm was ruptured in 2 (4%) patients. The retroperitoneal hematoma was noted in five (10%) patients. Three patients (6%) had renal damage, and bladder injury was observed in 2 patients. The incidence of organ injuries due to gender differences and the injury incidence of different organs is shown in Table 1.

Table 1: Shows the different organs injuries incidence.

Organ Injury	Total No.	Male	Female	P-value
Injury to Spleen	13	10	3	0.580
Injury to Liver	11	9	2	0.987
Kidney Injury + Liver injury	01	01	0	0.635
Injury to GUT	08	06	02	0.574
Gut Injury + Liver injury	03	02	01	0.476
Pancreatic Injury + GUT Injury	01	01	0	0.635
Injury to Kidney	02	02	0	0.498
Injury to Diaphragm	02	02	0	0.498
Injury to Retro peritoneum	05	04	01	0.901
Injury to Pancreas	01	01	0	0.635
Injury to Mesentery	03	03	0	0.403

DISCUSSION

In Pakistan, many financial, public, and social problems subsidize increasing the trauma incidence. In Pakistan, roads are in very poor conditions, public transport and private drivers do not obey traffic rules and drive automobiles carelessly, resulting in an increase in traffic accidents in recent years. In this study, most trauma victims were between 20 and 45 years of age when life was in a productive stage.^[11] In our analysis, from fifty

patients 21 (42%) were between the 26-40 years of age. In the United States, it was almost the same as in other studies by Gupta and others by Ball and Croley in America, and by Saad and Alpar. 5.4: 1 was the male / female ratio. Kunin obtained these results in France, and Ahmed in Lahore et al., who stated that 58% of cases were of traffic accidents, which result in blunt trauma to the abdomen. The main reason is that the passengers are sitting on the buses' roof and finding themselves exposed to serious damage. Besides, most drivers of buses effort

to earn above 24 hours by driving in a row and often use several hallucinogens and opium, causing decisions to be distorted in parts that lead to numerous serious traffic accidents. The blunt abdominal trauma most common cause is traffic accidents as defined by various global surveys, such as 48% by Han in the UK, 67% by Kunin in France, and 30% in the United States.^[12] Fall from the height is the 2nd major noted in 20% of cases. Many of these fall incidents happened among labors working in tall buildings. A minimum part might be accredited to the stairs fall in the house, or sometimes in the abdominal area, there was the fall of heavy objects as in industrial incidents while other various analyses have reported 18.18% incidence. In our analysis, the liver was the most commonly injured organ in 15 (30%) of the 50 cases. Hussain et al. Reported 22.7% of liver injury and Hoyt 15%. In our research, grade I and II injuries were noted in 73.3% of patients, while a study in Italy documents grade I, II, III liver injury in 84.75% of cases.^[13] The spleen is the 2nd most common organ injured in thirteen (26%) cases. When there is a rib fracture on the left side, it usually indicates that there may be a splenic tear also. The third most common organ that suffered injury was GUT (anal to the stomach) in eleven (19.6%) cases, concomitant with additional organ trauma.^[14] In this study, 5 cases (8.9%) related to a retroperitoneal hematoma, kidney, and bladder lesions were seen in fourth place. After that, renal and mesenteric tears were present at the same frequency, with three (5.4%) cases each; then pancreas, two cases of diaphragmatic injury, and bladder. This study result varies marginally from those of other analyses cited in Cuscheri essentials. 10% was the overall mortality rate.^[15] It is comparable to the Hussain study, which reported a 13.3% incidence in Faisalabad. Gupta et al. reported 11% in India and 20% reported in the UK by Alpar and Khan. In this study, the mortality rate was greater than 8.6% than in the USA reported by Croley and Ball. The death causes were multiple organ failure, septicemia, and hemorrhagic shock.

CONCLUSION

In Pakistan, the most common cause of blunt abdominal trauma is a traffic accident. More males are affected by abdominal trauma than women because of their outdoor lifestyle and their role as a source of income for their families. All intra-abdominal organs are susceptible to injury. In our analysis of blunt abdominal trauma, the most usual injured organ was the liver, followed by other organs, including the intestine, spleen, and retroperitoneal hematoma. The conservative and simple operative methods are required for most injuries. A skilled surgical team is a conclusive benefit and directly affects the prognosis of patient life expectancy. If the patient has poor nutritional support, it raises the morbidity.

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