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Research Article

**TO DETERMINE THE PATTERN AND INCIDENCE OF INTRA-
ABDOMINAL INJURIES IN PATIENTS HAVING BLUNT
ABDOMINAL TRAUMA**¹Dr. Marium khan, ²Dr. Maham Imran, ³Dr. Aiman Rashid¹Quaid-E-Azam Medical college, Bahawalpur²Quaid-e-azam Medical College bahawalpur³Quaid e azam medical college BWP**Article Received:** March 2020**Accepted:** April 2020**Published:** May 2020**Abstract:**

Between 1 and 45 years of age; the most common cause of mortality is due to trauma resulting in the loss of daily activities more than other well-known diseases, such as malignant tumours 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 Bahawalpur Victoria Hospital 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 Bahawalpur Victoria Hospital.*

***Results:** From 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 vary from the gastric region to the anal canal). In the small intestine, five patients attained injury and in the duodenum and stomach, 2 patients were noted with injuries and four patients in the large intestine. In two (4%) of cases; there was injury to the pancreas. The three patients (6%) had Mesenteric tear and 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 liver, followed by other organs including intestine, spleen and retroperitoneal hematoma.*

***Key Words:** Intra-abdominal injuries, abdominal trauma, frequency.*

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INTRODUCTION:

In this fast-moving world; the traffic flow accidents, are increasing day by day and the blunt abdomen trauma incidence is peaked because of the modern industry development and with the automobile industry development and due to rise in explosive compounds manufacture proficient of 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 trauma¹⁻². The utmost usual 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 diseases³. In general, solitary abdominal organ injuries account for ten percent of over-all trauma-related deaths. The supreme cause for the rise in morbidity and mortality after blunt trauma to abdomen due to RTA or any other cause is postponement in timely identification of trauma⁴. Blunt abdominal trauma most usual causes are falls, car accidents, industrial accidents and attacks⁵. 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 lack of early diagnosis and optimal treatment. Diagnosing a patient with intra-abdominal lesions is much more difficult because examination of abdomen does not consistently categorise all patients with injuries to intra-abdominal organs⁶. Approximately, 13 percent is the intraabdominal injury prevalence in blunt abdominal trauma patients. It was noted that in blunt trauma to the abdomen, the most injured organ is spleen concurred about fifty percent of cases⁷⁻⁸. In contrast, various analysis have testified that most commonly organ injured in trauma to abdomen is Liver and after this is spleen. Though, these discrepancies have not been resolved till now. Thus, this analysis was held to determine the pattern and frequency of intraabdominal injuries in blunt trauma to abdomen and to relate the data with international and national studies.

MATERIALS AND METHODS:

This Observational study was held in the Surgical Unit of Bahawalpur Victoria Hospital 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 of both sexes admitted in the Accidents and Emergency Department of Holy Family Hospital, Rawalpindi. Patients under the age of 12, numerous

injuries and that penetrated into the abdomen were not included.

All selectees were inquired rapidly by primary questionnaire to assess the physical state. For intravenous access; 2 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 patients 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 ultrasound of pelvis 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 analysed.

RESULTS:

50 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 2 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 vary from the gastric region to the anal canal). In the small intestine, five patients attained injury and, in the duodenum, and stomach, 2 patients were noted with injuries and four patients in the large intestine. In two (4%) of cases; there was injury to the pancreas. The three patients (6%) had Mesenteric tear and 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 Retroperitoneum	05	04	01	0.901
Injury to Pancreas	01	01	0	0.635
Injury to Mesentery	03	03	0	0.403

DISCUSSION:

In Pakistan there are many financial, public and social problems that subsidise to 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, result in increase of traffic accidents in recent years. In this study, the majority of trauma victims were between 20 and 45 years of age when life was in productive stage¹¹. 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 in the United Kingdom. 5.4: 1 was the male / female ratio. These results were obtained by Kunin in France and Ahmed in Lahore et al who stated that 58% cases were of traffic accidents which result in blunt trauma to abdomen. The main reason is that the passengers are sitting on the roof of the buses and finding themselves exposed to serious damage. In addition, mostly drivers of buses effort for earning above 24 hours by driving in a row and are 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 accident as defined by various global surveys, such as 48% by Han in the UK, 67% by Kunin in France and 30% in the United States¹². Fall from the height is the 2nd major noted in 20% of cases. Many of these fall incidents were happened among labours working in tall buildings. A minimum part might be accredited to the stairs fall in the house or some times in the abdominal area there was the fall of heavy objects as in industrial incidents while other various analysis have reported incidence of 18.18%. 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 study in Italy documents grade I, II, III liver injury in 84.75% of cases¹³. 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 splenic tear also. The third most common organ that suffered injury was GUT (anal to stomach) in eleven (19.6%) cases, which was also concomitant with additional organ trauma¹⁴. In this study, 5 cases (8.9%) related to retroperitoneal hematoma, kidney and bladder lesions were seen in fourth place. Thereafter, 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 results varies marginally from those of other analysis cited in Cuscheri essentials. 10% was the overall mortality rate¹⁵. It is comparable by Hussain study which reported 13.3% incidence in Faisalabad, Gupta et al reported 11% in India and 20% reported in the UK by Alpar and Khan. This study 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 usual cause of blunt abdominal trauma is traffic accident. There are more males 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 liver, followed by other organs including intestine, spleen and retroperitoneal hematoma. The

conservative and simple operative methods are required for most injuries. As skilled surgical team is a conclusive benefit and has a direct effect on the prognosis of patient life expectancy. If the patient has poor nutritional support it rises the morbidity.

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