

Assessment of Patients with Blunt Abdominal Trauma Admitted to Emergency Department

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Abstract

Background: Abdominal trauma caused by blunt force is a common presentation in the emergency room seen in adults and children. Hence; under the light of above mentioned data, we planned the present study to assess the profile of the patients admitted to the emergency department with blunt abdominal trauma (BAT). **Subjects and Methods:** The present study consisted of a total of 200 patients who were admitted to the emergency department with history of blunt abdominal trauma. Complete haematological profile of all the patients was obtained. We also obtained detailed demographic and clinical profile of all the patients. Radiographic imaging was done in all the patients for evaluating the extent of involvement of abdominal organs. Mortality rate was also calculated. **Results:** Majority of the patients belonged to the age group of 21 to 40 years. Abdominal distension was present in 80 percent of the patients while it was absent in 40 percent of the patients. Haematuria was found to be present in 12 percent of the patients, while it was absent in 88 percent of the patients. Mortality occurred in 12 percent of the patients. **Conclusion:** Patients with blunt abdominal trauma presents with a varied clinical presentation. Therefore radiographic diagnostic techniques should be carried out as soon as possible for assessing the extent of injuries so that prognosis could be improved.

Keywords: Blunt abdominal trauma, Emergency department.

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Introduction

Abdominal trauma caused by blunt force is a common presentation in the emergency room seen in adults and children.^[1] The chief cause of blunt abdominal trauma is road traffic accidents. Other rare causes include falls from heights, bicycle injuries, injuries sustained during sporting activities, and industrial accidents. In children, the most common causes are due to motor vehicle injuries and bicycle accidents.^[2-4]

About 10% of patients have persistent hypovolemic shock as a result of continuous blood loss in spite of aggressive fluid resuscitation and require an urgent laparotomy. Damage control laparotomy is a life saving procedure for such patients with life-threatening injuries and to control hemorrhage and sepsis.^[5-7] Hence; under the light of above mentioned data, we planned the present study to assess the profile of the patients admitted to the emergency department with blunt abdominal trauma.

Subjects and Methods

The present study consisted of a total of 200 patients who were admitted to the emergency department with history of blunt abdominal trauma. Ethical approval was obtained from

institutional ethical committee for the present study and written consent was obtained after explaining in detail the entire research protocol. Emergency care was given to all the patients. Complete haematological profile of all the patients was obtained. We also obtained detailed demographic and clinical profile of all the patients. Radiographic imaging was done in all the patients for evaluating the extent of involvement of abdominal organs. Mortality rate was also calculated. All the results were compiled in Microsoft excel sheet and were analysed by SPSS software.

Results

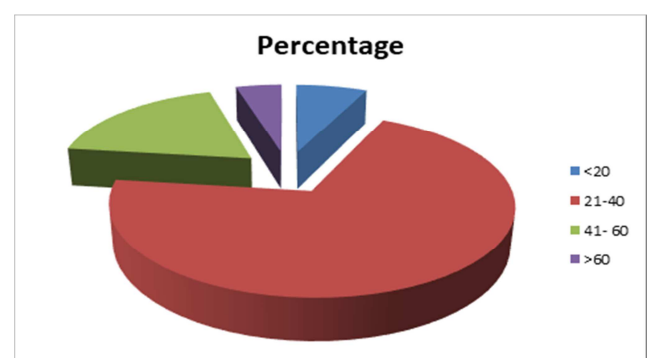


Figure 1: Distribution of subjects according to age

In the present study, majority of the patients belonged to the age group of 21 to 40 years. Mean age of the patients of the present study was 38.7 years. 18.5 percent of the patients belonged to the age group of 41 to 60 years. 90 percent of the patients of the present study were males while the remaining 10 percent were females. Abdominal distension was present in 80 percent of the patients while it was absent in 40 percent of the patients. Haematuria was found to be present in 12 percent of the patients, while it was absent in 88 percent of the patients. Mortality occurred in 12 percent of the patients.

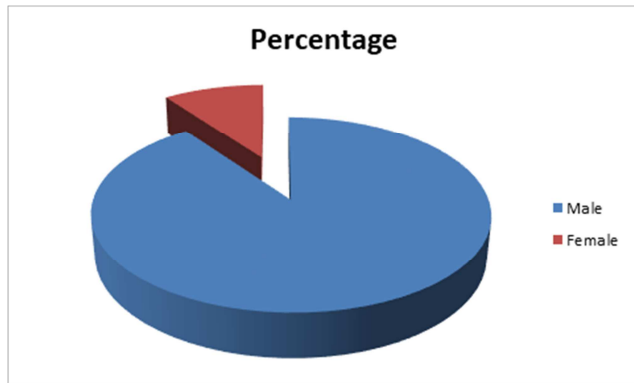


Figure 2: Distribution of subjects according to gender

Table 1: Distribution of subjects according to abdomen distension.

Abdomen distension	Frequency	Percent
Absent	40	20
Present	160	80
Total	200	100

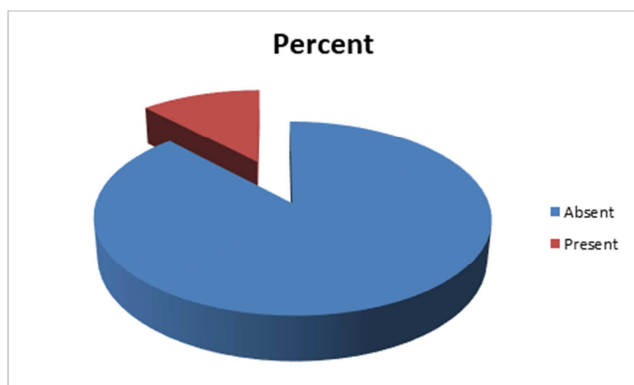


Figure 3: Distribution of subjects according to haematuria

Table 2: Distribution of subjects according to mortality

Mortality	Frequency	Percent
Absent	176	88
Present	24	12

Discussion

One of the main causes of morbidity and mortality worldwide is Trauma, and is still the most frequent cause of death in the first four decades of life. Moreover, it remains a major public health problem among all countries, regardless of the socioeconomic status. Abdomen is the third most frequently injured body region and about 25% of all

abdominal trauma cases require abdominal exploration. Usually, abdominal injuries occur either due to blunt or penetrating trauma, and around 7-10% of all trauma-related deaths occurred due to these injuries.^[8-10]

In the present study, majority of the patients belonged to the age group of 21 to 40 years. Mean age of the patients of the present study was 38.7 years. 18.5 percent of the patients belonged to the age group of 41 to 60 years. Several high quality prospective and retrospective studies have shown non-operative management of solid organ injury to be safe and effective, and this strategy is now accepted into mainstream practice.^[11-13] In parallel, a paradigm shift has occurred in imaging algorithms, with greater emphasis being put on the detection of specific findings, rather than the mere detection of intraperitoneal fluid, which does not predict the need for intervention. The greater availability of computed tomography and ultrasound in emergency departments has contributed to changes in practice, but it has also created new controversies—diagnostic peritoneal lavage is now rarely performed, but the diagnosis of hollow viscus injury by imaging alone remains contentious.^[14]

90 percent of the patients of the present study were males while the remaining 10 percent were females. Abdominal distension was present in 80 percent of the patients while it was absent in 40 percent of the patients. Haematuria was found to be present in 12 percent of the patients, while it was absent in 88 percent of the patients. Mortality occurred in 12 percent of the patients. Kendall JL et al determined the prevalence of intra-abdominal injury (IAI) and death in hemodynamically normal and stable BAT patients with initially negative ED evaluations admitted to an ED observation unit and to define a low-risk subgroup of patients. This was a retrospective cohort study performed at an urban level 1 trauma center and included all BAT patients admitted to an ED observation unit as part of a BAT key clinical pathway. All were observed for at least 8 hours as part of the key clinical pathway, and only minors and pregnant women were excluded. Outcomes included the presence of IAI or death during a 40-month follow-up period. Prior to data collection, low-risk criteria were defined as no intoxication, no hypotension or tachycardia, no abdominal pain or tenderness, no hematuria, and no distracting injury. Of the 1,169 patients included over the 2-year study period, 29% received a CT of the abdomen and pelvis, 6% were admitted to the hospital from the observation unit for further management, 0.4% were diagnosed with IAI, and 0% died. Patients had a median combined ED and observation length of stay of 9.5 hours. Of the 237 (20%) patients who met low-risk criteria, 7% had a CT of the abdomen and pelvis and 0% were diagnosed with IAI or died. Most BAT patients who have initially negative ED evaluations are at low risk for IAI but still require some combination of observation and CT.^[14]

Treatment of patients with blunt abdominal injury requires the routine ABCs (Airway, Breathing, and Circulation). Once the airway is protected, it is mandatory to protect the cervical spine. After the primary survey is complete, patients who are hypotensive require aggressive fluid resuscitation. If hemodynamic instability persists, blood should be typed and crossed. All patients with blunt abdominal trauma who have signs of peritonitis, frank bleeding, or worsening of clinical

signs require an immediate laparotomy.^[15,16] Mehta N et al evaluated 71 cases of BAT with stress on early diagnosis and management, increase use of non operative management, and time of presentation of patients. A retrospective analysis of 71 patients of BAT Demographic data, mechanism of trauma, management and outcomes were studied. Most of the patients in our study were in the age group of 21-30 years with an M:F ratio of 3.7:1. Motor vehicle accident (53%) was the most common mechanism of injury. Spleen (53%) was the commonest organ injured and the most common surgery performed was splenectomy (30%). Most common extra abdominal injury was rib fracture in 20%. Mortality rate was 4%. Wound sepsis (13%) was the commonest complication. Initial resuscitation measures, thorough clinical examination and correct diagnosis forms the most vital part of management. 70% of splenic, liver and renal injuries can be managed conservatively where as hollow organs need laparotomy in most of the cases.^[16]

Conclusion

Under the light of above obtained results, the authors conclude that patients with blunt abdominal trauma presents with a varied clinical presentation. Therefore radiographic diagnostic techniques should be carried out as soon as possible for assessing the extent of injuries so that prognosis could be improved. However; further studies are recommended.

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