

## “A Comparative Analysis of Nonpenetrating and Penetrating Abdominal Injuries”

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### Abstract

**Background:** The Aristotle has been given the credit of being the first to describe visceral injury from non penetrating trauma. Most of the ancient accounts concerns about penetrating organ injuries and their well known Mortality.

### Aim:

- 1.Age/sex distribution
2. Type of injury (blunt injury / penetrating injury)
- 3.Organ involvement
- 4.Mode of injury (assault ,accidents, fall, etc.)

### Methods:

Total of 52 cases of abdominal trauma [blunt and penetrating trauma] was analysed during the period of last 24 months (January 2017 to November 2018) in tertiary level care hospital. All patients who were admitted in our surgery department after abdominal trauma were included in this study.

**Results:** In this study, most common age group involved is 21-30 age group, sex distribution of male:female ratio is (9.9:1), with blunt injury abdomen more common than penetrating injury mostly involving single organ injury. Road traffic accident is the most common cause of abdominal injury. Thoracic injury is more commonly associated with abdominal injury. Based on the patient condition and radiological findings 56% of cases were treated by emergency laparotomy for organ injury and 44% of patients were managed conservatively.

**Keywords:** Trauma, Blunt Injury abdomen, Tachycardia.

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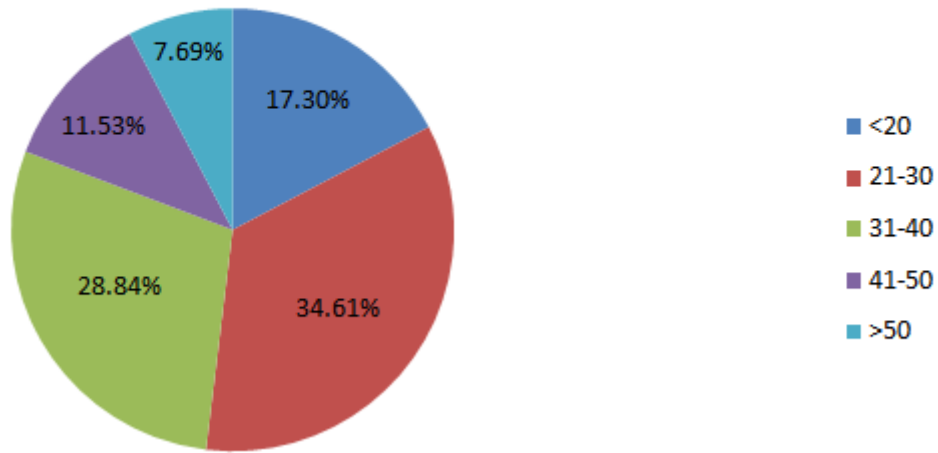
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### I. Introduction

Trauma is an accidental or intentional injury caused by an energy which is usually mechanical in nature to a victim 1% of hospital admissions for trauma involve the Abdomen. Several abdominal injuries are common in patients with multiple injuries. Trauma to the abdomen are classified as PENETRATING and NON - PENETRATING. While penetrating injuries are common in urban Places, non-penetrating is common in civilian trauma victims. Damage to organs can occur in both penetrating and non-penetrating trauma. The sudden application of pressure in non penetrating trauma is more likely to rupture solid Organ. While penetrating trauma causes more injury to hollow viscus organ. Two major life threatening situations occur following organ injury in both penetrating and non-penetrating trauma are HAEMORRHAGE and HOLLOW VISCOUS PERFORATION with associated chemical and bacterial peritonitis. Principles of treatment for various organ injuries are also directed towards control of Haemorrhage and peritoneal contaminations. Knowledge of the mechanism of injury together with the presence of associated injuries such as fracture ribs, fracture long bones, fracture pelvis will provide high index of suspicion of various organ involvement in abdominal injury.

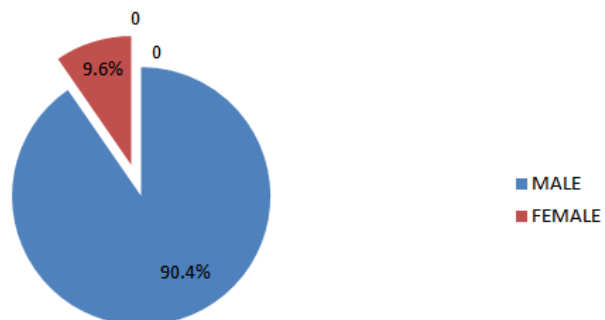
### AGE DISTRIBUTION



**TABLE 1.** Clinical Symptoms

SYMPTOMS	NO OF CASES	PERCENTAGE
Abdominal Pain	46	88.46
Haematuria	9	17.30
Abdominal distension	24	46.15
Vomiting	11	21.15
Hypotension	18	34.61
Tachycardia	41	78.84
Eviseration of bowel	3	5.76
Eviseration of omentum	5	9.61

### SEX DISTRIBUTION



**TABLE 2 – MODE OF INJURY**

<b>MODE OF INJURY</b>	<b>NO OF CASES</b>	<b>PERCENTAGE</b>
Railway accident	4	7.69
Road traffic accident	31	59.61
Assault – stab injury	6	11.53
Fall	11	21.15
<b>TOTAL</b>	<b>52</b>	<b>100</b>

**TABLE: 3 ORGAN INVOLVED**

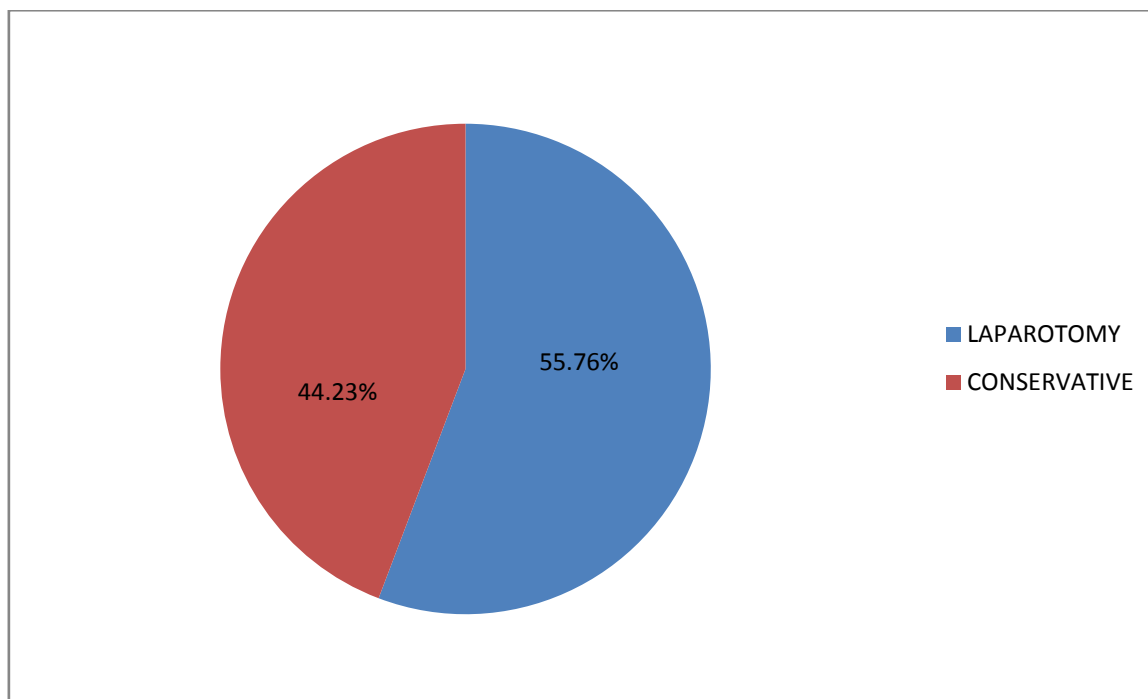
<b>ORGAN INVOLVED</b>	<b>NO OF CASES</b>	<b>PERCENTAGE</b>
No Organ injury	11	21.15
Single Organ injury	29	55.76
Multiple Organ injury	12	23.07
<b>TOTAL</b>	<b>52</b>	<b>100</b>

**TABLE 4 – ASSOCIATED INJURY**

<b>ASSOCIATED INJURY</b>	<b>NO OF CASES</b>	<b>PERCENTAGE</b>
Head injury	7	13.46
Thoracic injury	17	32.69
Pelvic fracture	9	17.30
Spine fracture	3	5.76
Other fracture	7	13.46
Nil	9	17.30

**TABLE 5: TYPE OF INJURY**

<b>TYPE OF INJURY</b>	<b>NO OF CASES</b>	<b>PERCENTAGE</b>
<b>BLUNT INJURY</b>	<b>37</b>	<b>71.15</b>
<b>PENETRATING INJURY</b>	<b>15</b>	<b>28.85</b>
<b>TOTAL</b>	<b>52</b>	<b>100</b>



## II. Conclusion

From this study, most common age group involved is 21-30 age group, sex distribution of male:female ratio is (9.9:1), with blunt injury abdomen more common than penetrating injury mostly involving single organ injury. Road traffic accident is the most common cause of abdominal injury. Thoracic injury is more commonly associated with abdominal injury. Based on the patient condition and radiological findings 56% of cases were treated by emergency laparotomy for organ injury and 44% of patients were managed conservatively. From above we conclude that abdomen injury will present differently in different patient and each individual has to be evaluated cautiously in order to find the diagnosis and treat them as early as possible to reduce morbidity and mortality.

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