

# Frequency of Colorectal Injuries in Patients with Abdominal Trauma at Liaquat University Hospital Jamshoro/Hyderabad

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## ABSTRACT

**Objectives:** The objective of this study is; to find out the frequencies of colorectal injuries in the patients with abdominal trauma.

**Study Design:** Cross sectional study

**Place and Duration of Study:** This study was conducted at the General Surgery Department, Liaquat Medical Hospital Hyderabad from 23 December 2014 to 22 November 2015.

**Materials and Methods:** All the patients with abdominal trauma, both genders with age 18 to 78 years were included in the study after taking an informed written consent from the patients and their attendant. Details of history, clinical examination in particular whole abdominal examination, ultrasonography and all require able lab investigations were carried out. Possible cause of abdominal trauma was found. Frequency of colorectal injuries was noted. Rectal injuries were evaluated with digital examination, proctoscopy/sigmoidoscopy, and/or CT scan. All the data was entered on predesigned Proforma attached with.

**Results:** Total 139 patients were selected and mean age was 39.4+7.2 years. Majority of the patients were males i.e. 110/(79.71%). According to mode of injury majority of the cases were found with Road traffic accident 95/(66.85%) . According to colorectal injuries majority of the cases were found with Ascending colon 35/(43.75%) and Transverse colon 24/(30.00%), following by Descending colon, Sigmoid colon and Rectum were found with percentage of 22/(27.50%), 19/(16.66%) and 07/(8.75%) respectively.

**Conclusion:** We concluded that 58% colorectal injuries due to abdominal trauma. Young males are more involved in the abdominal trauma and road traffic accident was the main cause.

**Key Words:** Colorectal Injuries, Patients, Abdominal Trauma

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## INTRODUCTION

Abdominal trauma among all age groups, leading cause of morbidity & mortality. To identify the complicated intra-abdominal pathologies is very challenging. Intestinal injuries can occur due to a various reasons. Among all those types of blunt trauma, the injuries by automobiles are the most common reason.<sup>1</sup> Unfortunately it is very tough to decide exact prevalence of traumatic injuries of the colon and rectum. The different literature is showing prospective trials and retrospective case series showing results of cohort of colorectal injured patients. In general, wartime series have a higher prevalence of the colon injuries at 5-10%,<sup>3,4</sup> with recent review showing more than 3,400 cases at the time of Operation Iraqi Freedom

finding occurrence of rectal and colon injuries in the 5.1%.<sup>5</sup> Mostly in the civilian had found the lower ratio, between 1-3%. Rates of blunt trauma is low, according to a study containing 2,632 hollow viscus injuries cases, where injuries of the colon and rectum were found in only 0.3%.<sup>6</sup> Similarly, Carrillo and colleagues showed low prevalence of 0.5% following blunt trauma,<sup>7</sup> while in another review containing 1,367 blunt trauma cases had 0.1% colon injuries.<sup>8</sup> Ultrasound is the highly assessment of the diagnosis of abdominal trauma, especially for the intra-abdominal fluid detection with percentage from 63% - 99%.<sup>9,10</sup> In the recent 100 years, great improvement was found in the management of traumatic colon and rectal injury. Colonic injuries management is very important ground of trauma medicine that needs further studies.<sup>11</sup> Primary repair might be carried out in 39% cases.<sup>12</sup> Since no such study has ever been conducted at LUMHS, that discusses the colorectal injuries in patients with abdominal trauma, therefore this study is designed to evaluate the incidence of colorectal injuries in patients with abdominal trauma.

## MATERIALS AND METHODS

This was cross sectional stud. Study was done in department of general surgery; Liaquat University

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hospital, with one year duration from 23 December 2014 to 22 November 2015. All the cases with abdominal trauma, age between 18 to 78 years either gender were included. All the patients under 18 years of the age and without abdominal traumas were not included. Informed written consent from the patients and their attendant was done. Details of history, clinical examination in particular whole abdominal examination, ultrasonography and all require able lab investigations were carried out. Possible cause of abdominal trauma was found. Frequencies of colorectal injuries were noted including injuries of solid organs (spleen, kidneys, liver, and pancreas), stomach, ureters, small intestine, and urinary bladder. Rectal injuries were evaluated with digital examination, proctoscopy/sigmoidoscopy, and/or CT scan. All the data was entered on predesigned Performa attached with.

**Statistical Analysis:** Data analysis done by SPSS version 17.0. The frequencies and percentages were calculated for categorical variables like gender, mode of injury and injuries of colon and rectum and other abdominal organs. Mean was calculated for numerical variable with age. P-value < 0.05 was considered as significant

**RESULTS**

In this study mean age was 39.4+7.2 years. Majority of the patients i.e. 110/(79.71%) were males as compare to females i.e.28/(20.86%).According to mode of injury majority of the cases were found with Road traffic accident 95/(66.85%) and Heavy object fall on abdomen 30/(21.73%), following by Gunshot was found with percentage of 13/(9.42%). Table 1.

In this study colorectal injuries were found 58% due to abdominal trauma.

According to colorectal injuries majority of the cases were found with Ascending colon 35/(43.75%) and Transverse colon 24/(30.00%), following by Descending colon, Sigmoid colon and Rectum were found with percentage of 22/(27.50%), 19/(16.66%) and 07/(8.75%) respectively. Table 2.

Colon injuries were significantly more associated with road traffic accidents (RTA) P Value = 0.001, and rectal injuries were significantly associated with gunshot injuries P Value = 0.001. Table 3

**Table:1. Patients distribution according to age, gender and mode of injury N=139**

Characteristics	Frequency (%)
Age (Mean+SD)	39.4+7.2 years
Gender	
Male	110/(79.71%)
Female	29/(20.86%)
Mode of injury	
Road traffic accident	95/(68.85%)
Heavy object fall on abdomen	30/(21.73%)
Gunshot	14/(10.07%)

**Table No. 2: Distribution of the cases according to colorectal injuries N=80**

Colorectal Injuries	Frequency /%
Ascending colon	35/(43.75%)
Transverse colon	26/(32.50%)
Descending colon	22/(27.50%)
Sigmoid colon	19/(16.66%)
Rectum	05/(6.25%)

**Table No. 3: Colorectal injuries according to mode of injuries N=80**

	Frequency			p-value
	RTA	Objective fall	Gunshot	
Ascending colon	29	05	01	0.001
Transverse colon	24	02	01	
Descending colon	17	04	01	
Sigmoid colon	11	06	02	
Rectum	01	00	04	

**DISCUSSION**

Incidence of abdominal trauma is found to be highest in the 21-40 year age group.<sup>13</sup>The most common reason was road traffic accident, occupational risks and interpersonal violence or assault. Results of this study are showing similar findings that young population is very susceptible to injuries including abdominal trauma. In our study mean age was 39.4+7.2 years, and male gender was most common 110/(79.71%) in the comparison of female 28/(20.29%). Laghari ZH et al<sup>14</sup> reported that out of these 50 patients, 4 (8%) patients were females and 46 (92%) male. Afridi SS et al<sup>15</sup> reported that out of 261 cases, 70.88% were males while 29.12% were females and age was ranged from 15 to 58 years with mean of 29.74+8.59 years. Study was conducted by Musau et al<sup>16</sup> at Kenyatta National Hospital whose results shows that male to female ratio was 12.3:1. Majority of male involvement is due to occupational risk and other socio-economical activities which men are doing and putting them at risk of injuries. In this series majority of the cases were found with Road traffic accident 95/(66.85%) and Heavy object fall on abdomen 30/(21.73%), following by Gunshot was found with percentage of 13/(9.42%). Common cause of blunt abdominal trauma<sup>17</sup> is road traffic accidents. In this study, the common reason was Road traffic accident (62.8%); next major reason was found to be falling from a height and the third was interpersonal violence. Results of other studies have found that the most important reason of blunt abdominal trauma was road traffic accidents, interpersonal violence, and falls.<sup>18</sup> The most important reason of penetrating abdominal trauma was found to be stabbing (47.4%). Gunshot wounds were the most important (77.65%) reported cause in studies conducted by other.<sup>19,20</sup>

According to colorectal injuries majority of the cases were found with Ascending colon 35/(43.75%) and Transverse colon 24/(30.00%), following by

Descending colon, Sigmoid colon and Rectum were found with percentage of 22/(27.50%), 19/(16.66%) and 07/(8.75%) respectively. Aziz A, et al,<sup>21</sup> reported that most common site of colonic injury was Cecum, accounting for 56% of total injuries to colon, followed by ascending colon, 13%, and right transverse colon 11% (n=9) colon.

In this study according to additional organ injuries majority of the cases were found with Small intestine 33/(23.91%), Liver 26/(18.84%) and Stomach 10/(07.24%), following by Kidney, Diaphragm, Urinary Bladder, Pancreas and Gallbladder were found with percentage of 31/(22.46%), 07/(05.07%), 11/(07.97%), 05/(03.62%), and 01/(00.72%) respectively. Aziz A, et al,<sup>21</sup> demonstrated that most common organ injury was hepatic injury, involved in 15 cases 30% out of the 50 patients and 2<sup>nd</sup> most common injury was the splenic injury 26% cases. Hussain et al.<sup>22</sup> suggested 22.7% liver injuries, as well as Hoyt et al,<sup>23</sup> showed 25%. Aziz A et al<sup>21</sup> stated road traffic accident was the commonest mode of injury in 58% patients, falling history was in 20% cases, 16% patients injured due to violence while 3 (6%) patients had trauma because of industrial accident.

## CONCLUSION

We concluded that 58% colorectal injuries due to abdominal trauma. Young males are more involved in the abdominal trauma and road traffic accident was the main cause. Abdominal trauma is highly associated with colorectal injuries. Rectal injuries were mostly associated with gunshot injuries.

**Conflict of Interest:** The study has no conflict of interest to declare by any author.

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