



CODEN [USA]: IAJPBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.3608457>Available online at: <http://www.iajps.com>

Research Article

**A DESCRIPTIVE STUDY TO ASSESS THE OUTCOMES OF
PRIMARY REPAIR AMONG PATIENTS EXPERIENCING
TRAUMATIC COLONIC INJURIES**¹Dr. Sana Jamal, ²Zoya Fatima Tariq, ³Dr Ali Raza¹Allama Iqbal Medical College Lahore²Jinnah Hospital Lahore³MO Jinnah hospital Lahore**Article Received:** November 2019 **Accepted:** December 2019 **Published:** January 2020**Abstract:**

Objective: This research aims to assess the occurrence of primary repair outcomes among patients experiencing traumatic colonic injuries.

Material and Methods: We carried out this descriptive research at Services Hospital, Lahore from April to October 2018 on a total of eighty patients experiencing exploratory laparotomy for colon injuries and abdominal trauma. Patients were enrolled in the age bracket of (20 – 60) years of both males and females. We did not include all those patients experiencing chronic liver disease, diabetes mellitus, associated > 2 organ injuries, hypertension, shocked patients (> 8 hours) after trauma and required (> 8 pints) of blood. Traumatic colonic Injury found in patients before operation while patients received Stab abdomen, Gunshot abdomen, road traffic accidents and blunt trauma abdomen. Institutional approval was sought before the commencement research along with informed consent of the patients.

Results: In the age bracket of (20 – 60) years the mean age was (34.99 ± 14.65) years. Four patients presented leakage (5%) and 76 presented no leakage (95%). In the total of 80 patients, 52 were male (65%) and 28 were female (35%). Fifty males presented no leakage (96.15%) and 26 females (92.86%) patients. Gender presented no significant association with absence of leakage (P-Value 0.92). Gunshot abdomen was reported among 41 patients (51.25%), blunt trauma abdomen in 14 patients (17.5%) and 25 stab abdomen patients (31.25%).

Conclusion: This research indicates that trauma colon primary repair presents low risk during treatment. However, we need to evaluate the outcomes of the treatment on a larger scale among moderate risk to high risk traumatic colonic injuries.

Keywords: Colon Trauma, Colon Injury, Anastomosis Leakage and Primary Repair.

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Please cite this article in press Sana Jamal et al., A Descriptive Study To Assess The Outcomes Of Primary Repair Among Patients Experiencing Traumatic Colonic Injuries., Indo Am. J. P. Sci, 2020; 07(01).

INTRODUCTION:

To this effect, disabilities and deaths are worldwide attributed to trauma [1]. Hollow viscera injuries are less reported among blunt abdominal trauma in comparison to the penetrating abdominal trauma. Blunt abdominal trauma causes (5% – 15%) injuries among all operative injuries [2, 3]. Deaths are commonly caused because of abdominal trauma with most of the patterns like stab wounds, Gunshot wounds and abdomen blunt trauma. Penetrating abdominal trauma also injures the colon; moreover, the majority of colonic injuries caused RTA (Road Traffic Accidents) which cause damage to multiple organs [2, 4, 5]. The proportion of injuries is such that colon injuries are reported among gunshot cases (25%), stab wounds (5%) and blunt injuries (2% – 5%) cases [6]. Colon injuries also relate to mortality rate and septic complications [7]. The use of resection in such colon injuries cases is still controversial [8]. Primary repair of the traumatic colonic injuries has replaced the treatment through faecal diversion dogma [2, 5]. Few researchers do not support the regular treatment of traumatic colonic injuries through colostomy [9].

Most of the traumatic colonic injuries are treated through one stage of trauma management at discovery [10]. Primary repair requires more liberal utilization among traumatic colonic injury patients [7]. Primary repair is recommended for the treatment of traumatic colonic injuries [11]. Few authors also support the outcomes of primary repair while considering associated risks [12]. The questions about the safety of this procedure for faecal contamination is still unanswered [11]. Colostomy causes religious and social embarrassment, psychological trauma and economic burden for patients. More research work is requiring for the determination of primary resection/repair to evaluate complications associated with the procedure [13]. The research aims to assess the occurrence of primary repair outcomes among patients experiencing traumatic colonic injuries.

MATERIAL AND METHODS:

We carried out this descriptive research at Services Hospital, Lahore from April to October 2018 on a total of eighty patients experiencing exploratory laparotomy for colon injuries and abdominal trauma. Patients were enrolled in the age bracket of (20 – 60) years of both males and females. We did not include all those patients experiencing chronic liver disease, diabetes mellitus, associated > 2 organ injuries, hypertension, shocked patients (> 8 hours) after trauma and required (> 8 pints) of blood. Traumatic colonic Injury found in patients before operation while patients received Stab abdomen, Gunshot abdomen, road traffic accidents and blunt trauma abdomen. Institutional approval was sought before the commencement research along with informed consent of the patients.

We entered post-surgical information regarding gender, age, injury grade, mode and site on a predesigned Proforma. On the sixth day of surgery, every patient underwent an assessment for repair failure and anastomotic leakage. On the sixth day of surgery; Pulse rate under 100 / min, clinical non-tenderness, systolic B.P under 90 mmHg, passing flatus/faeces, non-distended abdomen which were confirmed through CT Scan and USG representing repair failure and absence of Anastomotic Leakage. Outcomes were assessed through SPSS for statistical analysis. Age was presented in Mean and SD; whereas, gender, age, injury grade, mode and site were calculated in frequencies along with repair failure and anastomotic leakage (P-Value \leq 0.05).

RESULTS:

In the age bracket of (20 – 60) years the mean age was (34.99 ± 14.65) years. Four patients presented leakage (5%) and 76 presented no leakage (95%). In the total of 80 patients, 52 were male (65%) and 28 were female (35%). Fifty males presented no leakage (96.15%) and 26 females (92.86%) patients. Gender presented no significant association with absence of leakage (P-Value 0.92). Gunshot abdomen was reported among 41 patients (51.25%), blunt trauma abdomen in 14 patients (17.5%) and 25 stab abdomen patients (31.25%).

Table – I: Absence of Leakage

Leakage Absence	Number	Percentage
Yes	76	95
No	4	5

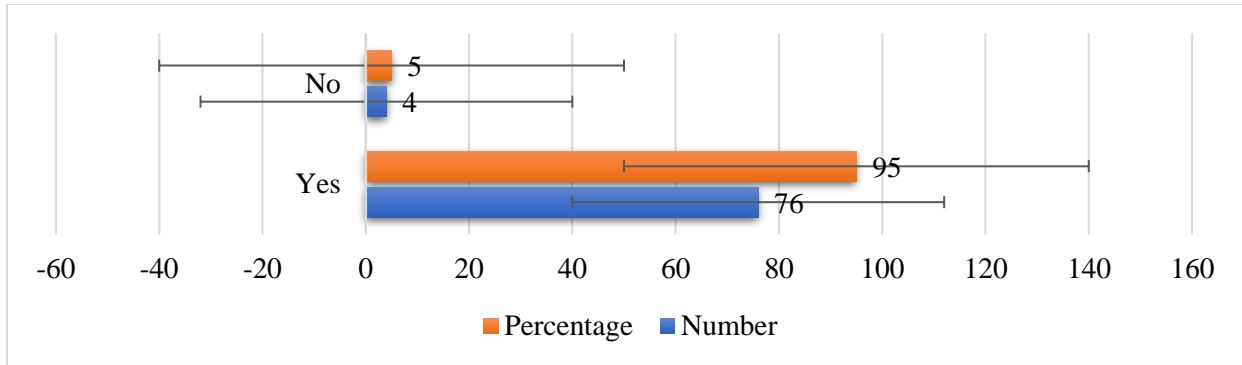
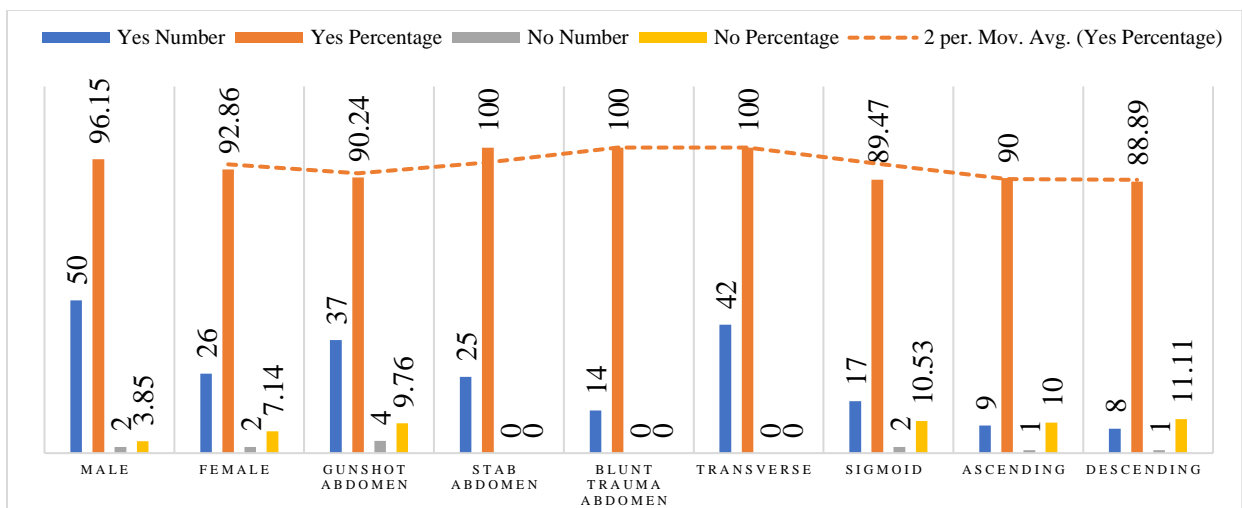


Table – II: Absence of Leakage with respect to Gender, Injury Mechanism and Injury Site

Leakage Absence		Yes		No		Total		P-Value
		No	%	No	%	No	%	
Gender	Male	50	96.15	2	3.85	52	65	0.920
	Female	26	92.86	2	7.14	28	35	
Injury Mechanism	Gunshot Abdomen	37	90.24	4	9.76	41	51.25	0.1347
	Stab abdomen	25	100	0	0	25	31.25	
	Blunt Trauma Abdomen	14	100	0	0	14	17.5	
Injury Site	Transverse	42	100	0	0	42	52.5	0.1976
	Sigmoid	17	89.47	2	10.53	19	23.75	
	Ascending	9	90	1	10	10	12.5	
	Descending	8	88.89	1	11.11	9	11.25	



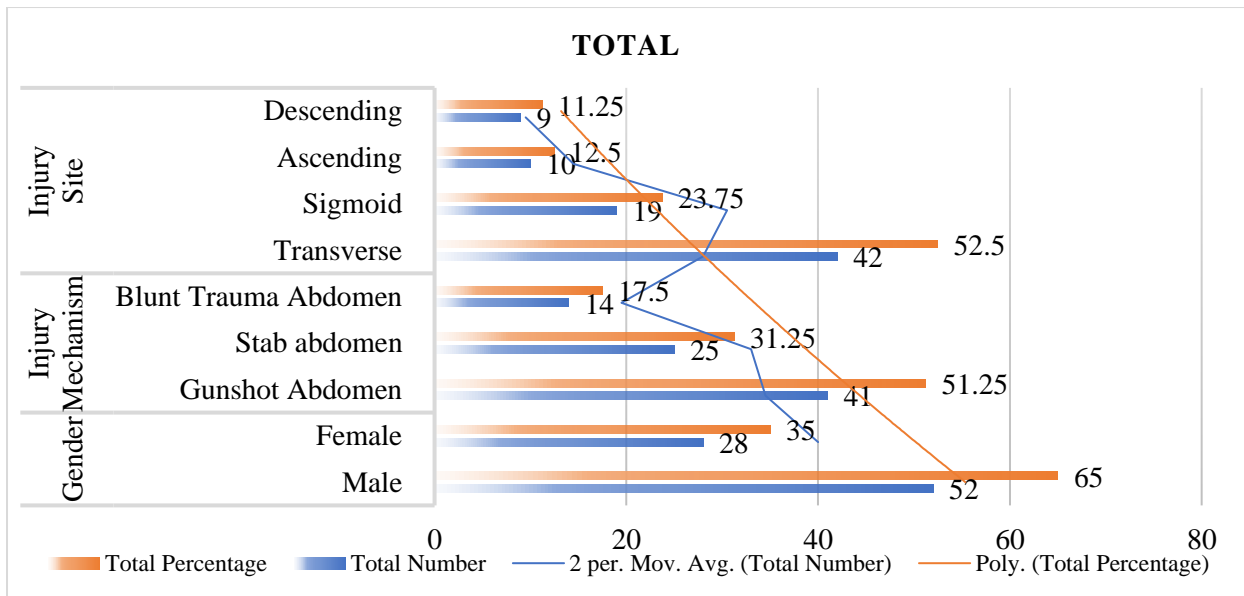
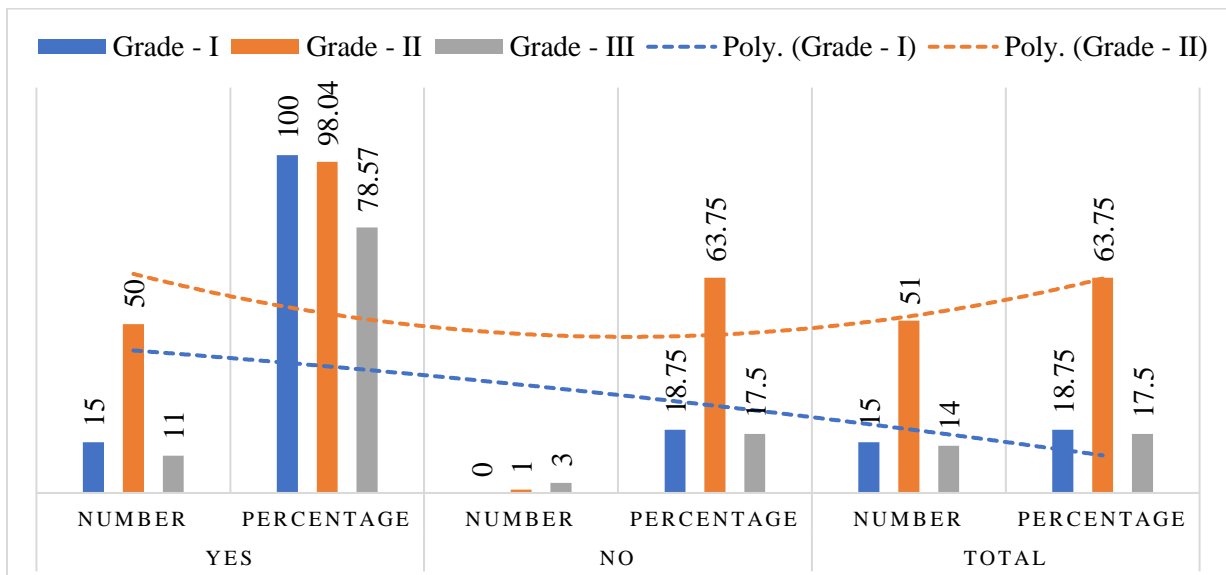


Table – III: Grade-Wise Absence of Leakage

Leakage Absence	Yes		No		Total		P-Value
	No	%	No	%	No	%	
Grade – I	15	100	0	18.75	15	18.75	0.008
Grade – II	50	98.04	1	63.75	51	63.75	
Grade – III	11	78.57	3	17.5	14	17.5	



DISCUSSION:

Traumatic colonic injuries refer to those injuries which are sustained during road traffic accidents, gunshot abdomen, blunt trauma abdomen and stab abdomen; moreover, it also graded as a serious medical emergency [1 – 3]. A total of eighty patients were enrolled in this research after fulfilling preliminary criteria having a mean age of (34.99 ±

14.65). Israr reported (21 years) as the mean age in his study group [12]. Male to female ratio was calculated (1.85 to 1) including 35% females and 65% males. Males dominated in number. Another study showed a proportion of four to one for males and females [12].

Another author reported that males were more exposed to colonic injuries due to their increased exposure to the outer world because of blunt and stab abdomen trauma along with the use of firearms [14]. Our research also proportionate gunshot abdomen, stab abdomen and blunt trauma abdomen respectively 51.2%, 31.2% and 17.5%. Gender and injury mechanism was similar in the research. Transverse colon was mostly affected followed by sigmoid colon, ascending and descending colon with respective proportions of 52.5%, 23.8%, 12.5% and 11.3%. National-level research also graded transverse colon injuries above all other injuries [15].

An international author conducted by Kairaluoma also graded Transverse colon injuries above all other injuries [16]. Clarke carried out research to study the onset of colonic injuries on a total of 102 cases and found 51.9% involvement of injured transverse colon [17]. The outcomes of these studies were close to our reported outcomes. Grade – I, II & III colon injuries was reported in our research 18.8%, 63.8% and 17.5% respectively. According to Sasaki LS, the score of Grade – II & III colon injuries for primary repair was 58% and 28% respectively [18].

We reported 95% repair failure and absence of anastomotic leakage. Another research reported no onset of anastomotic leakage [9]. Chappuis reported no suture line failure for primary repair [19]. George reported no case of suture line failure among a total of 95 patients in anastomosis group [20]. Only failure case went repeated interventions before leakage to spot bleeding. Mealy reported 7.2% anastomotic leak rate in a clinical setting [21]. Khan reported leakage after colon repair among 15% patients [22].

CONCLUSION:

This research indicates that trauma colon primary repair presents low risk during treatment. However, we need to evaluate the outcomes of the treatment on a larger scale among moderate risk to high risk traumatic colonic injuries.

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