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Research Article

**ASSESSMENT AND EVALUATION OF THE WOUND
PATTERNS ATTRIBUTED TO BLUNT ABDOMINAL TRAUMA
INJURIES OF VARIOUS BODY ORGANS: A CROSS-
SECTIONAL STUDY**¹Dr. Nasrullah Zeeshan, ²Dr. Aroosa Khalid, ³Dr. Muhammad Salman Akhtar¹Allama Iqbal Medical College, Lahore²Punjab Medical College Faisalabad³WAPDA Hospital Complex, Lahore**Abstract:**

Objective: The objective of the research was to evaluate the wounds pattern because of abdominal injuries.

Methodology: The design of our research was cross-sectional which was completed at Sir Ganga Ram Hospital, Lahore from February to September 2017. The total number of abdominal injuries patients enrolled for research are one hundred and ten. Entire one hundred and ten patients were passes through exploratory laparotomy.

Results: All one hundred and ten abdominal trauma patients were in between twenty-seven to fifty years of age. The numbers of male and female patients in the research were nine-two (83.64%) and eighteen (16.36%) respectively. The number of patients got abdominal injuries through road mishaps were sixty-four (58.18%) along with twenty-nine (26.36%) slip from a height. The cases having the previous record of the physical strike were seventeen (15.46%). In entire patient's, twenty-eight (25.45%) cases have an injury of Pancreas along with thirty (27.27%) duodenum injured cases. The number of patients got kidney injury was thirty-four (30.91%) aside with eighteen (16.36%) pancreatoduodenal injuries.

Conclusion: In our research, the mishaps on the road were the main factor of intense abdominal injuries along with injuries to the kidney as a most general affected organ of the body. The ratio of intense abdominal injuries was greater in males with reference to females.

Keywords: Blunt Abdominal Injuries, Inferior Vena Cava (IVC) and Retroperitoneal Organs.

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INTRODUCTION:

Injuries are the most dominant avoidable factor of fatality in Pakistan similar to other progressive states [1]. Causalities due to a factor of incidental injuries are graded as fourth in Pakistan. The eight percent of the entire causalities in Pakistan are due to said injuries. The number of causalities due to these accidents are almost 0.14 million and approximately 0.30 million are disable annually [2]. The injury to a body by exchange with the potency of the atmosphere which is superior to body vitality is called trauma. Trauma is a major factor of causalities along with disability between twelve to sixty years age of people [3]. Because of its bigger surface volume abdomen is the most general damage area of the body [4]. The organ of the abdomen that is isolated from peritoneum formerly through the subsequent peritoneal fascia is retroperitoneal as well as restricted eventually through fascia transversal [5]. Retroperitoneal organ comprises duodenum as well as colon, kidney, pancreas, abdominal aorta, IVC and adrenal glands. Closely seventy-five percent of the blunt abdominal trauma succeeded deep wounds [6]. Abdominal trauma is generally connected with wounds or injuries such as injury of head, chest wounds, and injuries to bones. Additionally, the judgment of laparotomy conduction for deep and abrupt abdominal injuries is most challenging and complicated such as structural wounds being minor apparent. The complicated most portion of the abdomen is retroperitoneum [7]. Retroperitoneal parts wounds happen largely in cases with polytrauma [8]. Retroperitoneal organ damages come in most fatal damage endure by trauma patient as well as the most general factor of these are injuries are road mishaps, fallen from the heightened place, physical strike, and collision with animal [9]. Damages to retroperitoneal parts are known to happen in an expressive minority of abrupt abdominal trauma patients [10].

MATERIAL AND METHODS:

The design of our research was cross-sectional which was completed at Sir Ganga Ram Hospital, Lahore from February to September 2017. The total number of abdominal injuries patients enrolled for research are one hundred and ten. The researcher takes a recommendation from an organization review panel along with patients and their guardians. All one hundred and ten abdominal trauma patients (both males and females) having age in between twelve to sixty years and passes through exploratory laparotomy are selected for research.

The identification of abrupt abdominal injuries was prepared on the base of existence of compassionateness, hardness as well as

discolouration over the abdominal wall. All those patients are included in the research which is displayed within twelve hours of nourishing wounds. All those patients are expelled from the research who are without operation treated, all those patient passes through a different type of intruding abdominal injury as well as expiring patients of ASA-5. Researcher feed demographic details of entire patients in Performa prepared for said purpose and recorded Injury condition along with intra-abdominal injuries comprising duodenum, kidney, and pancreas. The scale prepared by organ injury grading panel of the American Association for the surgery of trauma, utilized to classify the wounds to different parts. A doctor confirmed injuries classification. Researcher assessed the facts by utilizing SPSS and measured average as well as SD for numerical facts along with commonness and proportion for categorical facts, utilized Chi-Square test to find out connection/relation. P value = 0.05 was assumed as expressive.

RESULTS:

All one hundred and ten abdominal trauma patients were in between twenty-seven to fifty years of age. The numbers of male and female patients in the research were nine-two (83.64%) and eighteen (16.36%) respectively. The cases having the previous record of the physical strike were seventeen (15.46%). In entire patient's, twenty-eight (25.45%) cases have an injury of Pancreas. The number of patients got kidney injury was thirty-four (30.91%) aside with eighteen (16.36%) pancreatoduodenal injuries and category I, II, III, IV and V injuries were diagnosed in seven (25%), ten (35.7%), seven (25%), three (10.7%) as well as one (3.4%) respectively. Among thirty (27.27%) duodenum patients succeeded category I, II, III, IV and V injuries diagnosed in five (16.67%), fifteen (50%), eight (26.27%), two (6.8%) respectively and category V injury was not diagnosed in several contingents. Among thirty-four (30.91%) kidney injury patients category I, II, III, IV and V injuries diagnosed in four (11.8%), ten (29.4%), ten (29.4%), six (17.6%), and four (11.8%) patients respectively. Researcher carried out categorization of injury in connection to gender. Among sixty-four (58.18%) road accident cases, the number of the male and female patient was fifty-three (82.81%) and eleven (17.19%) respectively. In twenty-nine (26.36%) slip from height patients, the number of the male and female patient was twenty-four (82.76%) and five (17.24%) respectively. Among seventeen (15.46%) physical strike patients, the number of the male and female patient was fifteen (88.24%) and two (11.76%) respectively. The researcher found no relation in injury condition as

well as the gender with $p = 0.857$ and conducted age categorization.

Among sixty-four (58.18%) road accident cases, thirty-eight (59.38%), twenty-one (32.81%) and five (7.8%) patients are associated to age category of twelve to fifteen, thirty-six to fifty and fifty-one to seventy years respectively. In twenty-nine (26.36%) slip from height patients, seventeen (58.62%) associated to age category of twelve to thirty-five, eight (27.59%) twenty-six to fifty years and four

(13.8%) associated to fifty-one to seventy-year age category. Among seventeen (15.46%) physical strike patients fourteen (63.64%) associated to age category of twelve to thirty-five years, four (18.18%) to age category of thirty-six to fifty years and four (18.18%) patients associated to age category of fifty-one to seventy years. The researcher did not diagnose any relation in the condition of injury and age category with $P = 0.546$.

Table – I: Mode of Injury

Injury Mode	Number	Percentage
Physical Assessment	17	16.45
Height Fall	29	26.36
Road Accidents	64	58.18

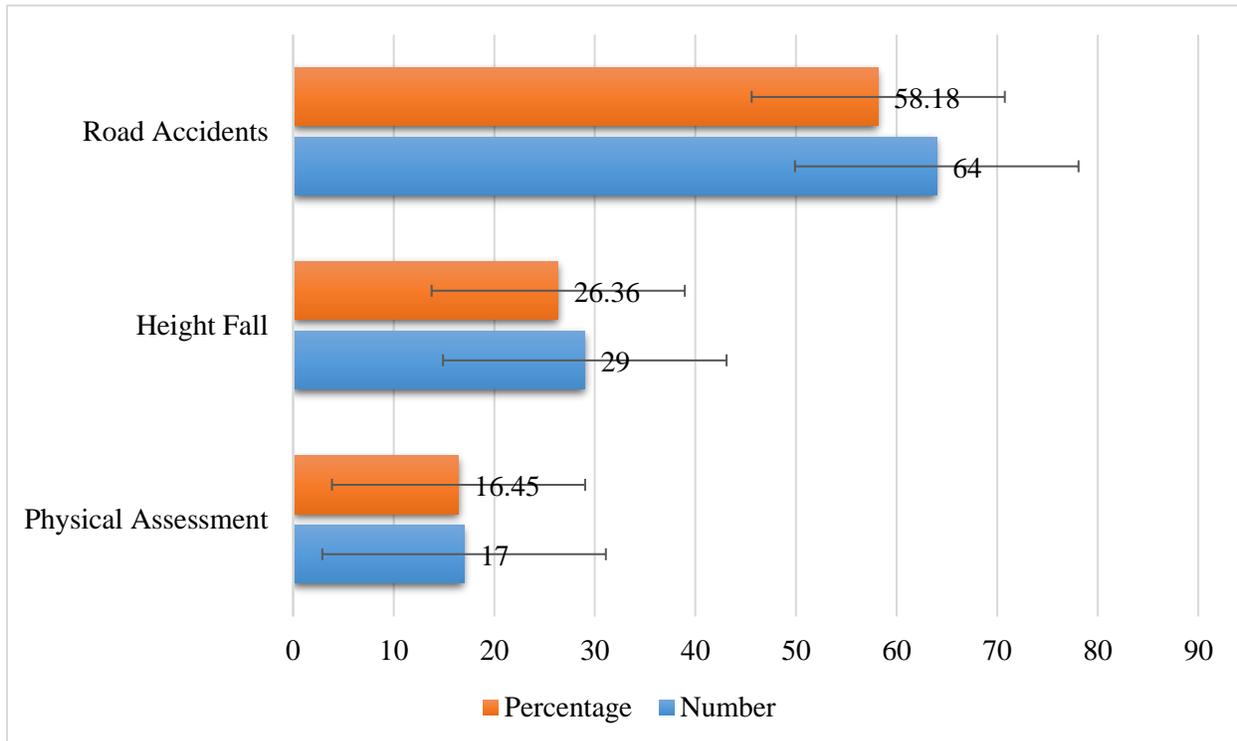


Table – II: Grade Wise Injury of Organ

Organ Injury		Pancreas	Duodenum	Kidney	Pancreatoduodenal	Total
Grade – I	Number	7	5	4	13	28
	Percentage	25	16.67	11.8	72.2	25.45
Grade – II	Number	10	15	10	3	37
	Percentage	35.7	50	29.4	16.67	33.64
Grade – III	Number	7	8	10	1	27
	Percentage	25	26.27	29.4	5.6	24.56
Grade – IV	Number	3	2	6	1	12
	Percentage	10.7	6.8	17.6	5.5	10.9
Grade – V	Number	1	0	4	0	6
	Percentage	3.4	0	11.8	0	5.4
Total	Number	28	30	34	18	110
	Percentage	25.45	27.27	30.91	16.36	100

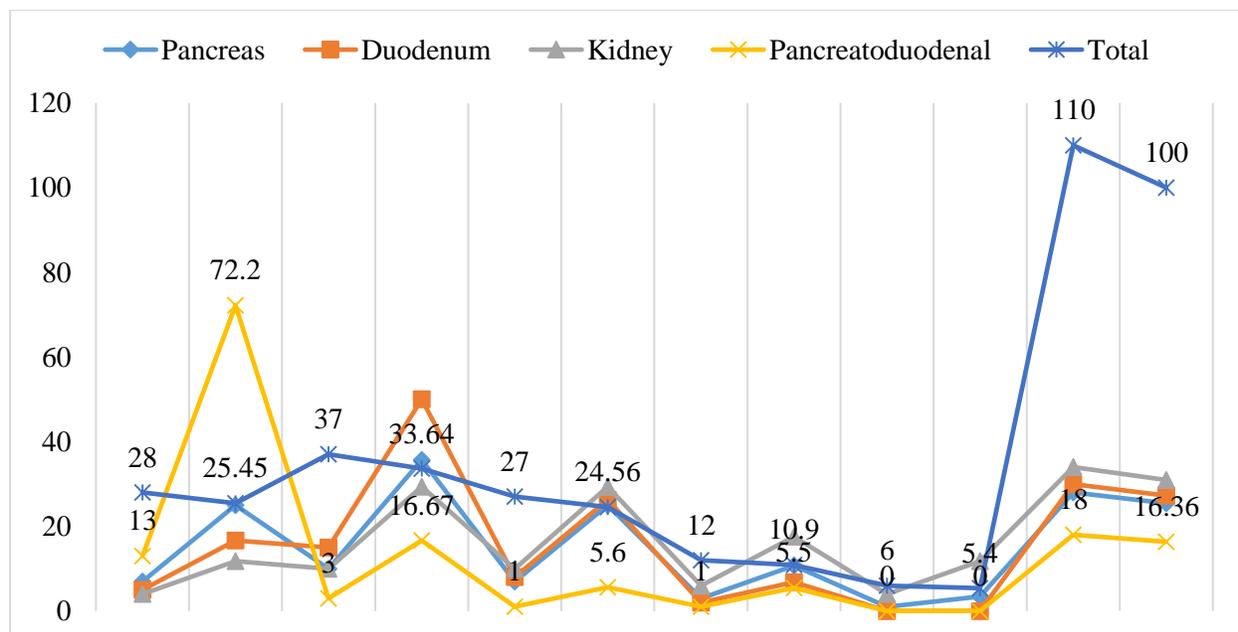
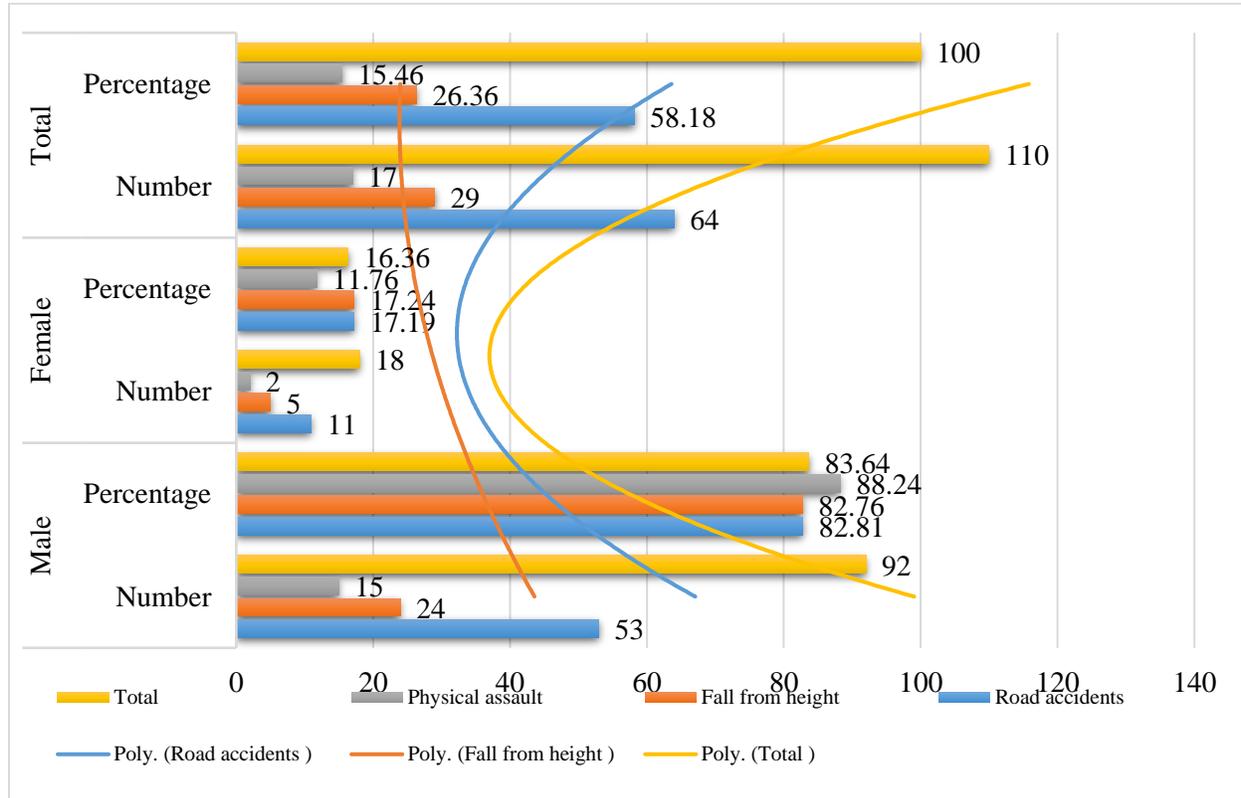
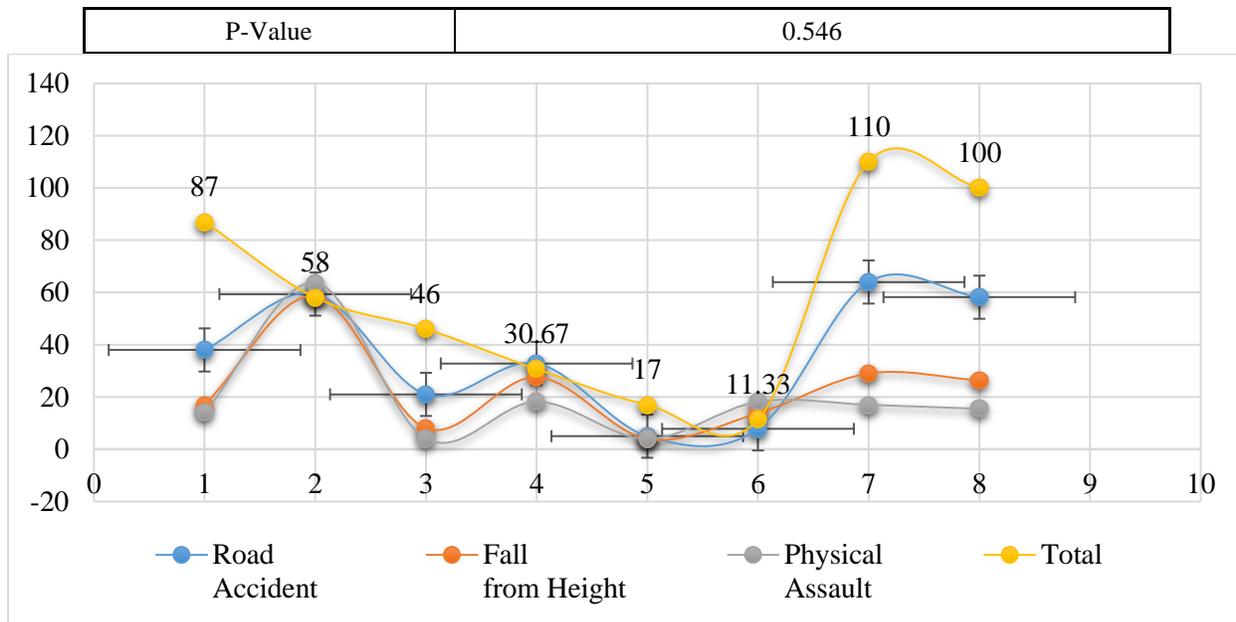


Table – III: Gender Wise Mode of Injury Stratification

Injury Mode	Male		Female		Total		P-Value
	Number	Percentage	Number	Percentage	Number	Percentage	
Road Accidents	53	82.81	11	17.19	64	58.18	0.857
Fall from Height	24	82.76	5	17.24	29	26.36	
Physical Assault	15	88.24	2	11.76	17	15.46	
Total	92	83.64	18	16.36	110	100	

**Table – IV:** Age Wise Mode of Injury Stratification

Injury Mode		Road Accident	Fall from Height	Physical Assault	Total
12 – 35 Years	Number	38	17	14	87
	Percentage	59.38	58.62	63.64	58
36 – 50 Years	Number	21	8	4	46
	Percentage	32.81	27.59	18.18	30.67
51 – 70 Years	Number	5	4	4	17
	Percentage	7.8	13.8	18.18	11.33
Total	Number	64	29	17	110
	Percentage	58.18	26.36	15.46	100



DISCUSSION:

Injury to retroperitoneal parts consequent abrupt abdominal injuries has consistently a huge complication to surgeons with bigger desire to upgrade the quick diagnosing along with treatment results. Abrupt abdominal injuries are an advance factor of bitterness and fatality in entire categories of age [11]. With respect to our research, the men are mostly affected with abdominal injuries as correlating to women and that is in accordance with Khan et al research younger lot especially entire of twenty to thirty years age category have been identified as most common victims [6]. The accidents due to vehicles were a major factor of abrupt abdominal injuries with slipping from the heightened place and physical strike as 2nd and 3rd main reasons. The number of patients got abdominal injuries through road mishaps were sixty-four (58.18%) along with twenty-nine (26.36%) slip from a height. The cases having the previous record of the physical strike were seventeen (15.46%). Various different research also presented as road mishaps, slip from height and physical strike are the main factors of abrupt abdominal injuries [12, 13]. Ahmed et al also presented abrupt abdominal trauma is the developing factor of demise in patients of one to forty-four years of age [9]. Abrupt abdominal injuries considered for seventy-nine percent patients and the men are mostly affected with abdominal injuries as a correlate to women. In the research of Bhattachar Jee et al abrupt abdominal injuries are most common in men having age twenty-one to thirty years of age; the maximum of patients got injury due to automobile collapse. In our research duodenum got an injury in

27.27% patients. A research of Zafudim et al presented mostly patients damage with vertical collapse, just almost six percent had abrupt abdominal injuries. In accordance with these findings research by Bhattacharjee and Antonacci et al injuries to duodenal made almost three to five percent of abdominal injuries. Abrupt abdominal injuries as an outcome of a primary blow to epigastrium, largely because of roads collapse and injuries in the sports ground, considered for twenty-five percent of the entire duodenum injuries as presented by Chinnery as well as Girgin at al [17, 18]. In our research, the number of patients got kidney injury was thirty-four (30.91%). category I, II, III, IV and V injuries were diagnosed in four (11.8%), ten (29.4%), ten (29.4%), six (17.6%), and four (11.8%) patients respectively. Uniformly Wong et al eighty-nine patients of category II kidney injuries were noted along with abrupt trauma considering for 94.4%, category II injuries with 57.3%, 12.4% category III injuries and 25.8% & 4.5% as category IV and V injuries respectively, presented results [19]. A major cause of Injuries to kidney because of motorcycles as well as MVAs accounting 48.3% of entire kidney injuries. In our research, twenty-eight (25.45%) cases have an injury of Pancreas along with 16.36% pancreatoduodenal injuries these are categorized by huge bitterness and demise with forty to forty-five percent composite rate as presented in the reappraisal of literature [17, 20]. Pancreatic injuries happened in three to fifteen percent of entire abdominal injuries. Separated traumatic damages of the pancreas are not frequent; in fifty to ninety-eight percent of the cases, they are related to injuries of other parts, just like

spleen, kidney liver or arteries. Because of the retroperitoneal position of the pancreas, separated pancreatic damages happened in less than five percent of main abrupt abdominal injury [21].

CONCLUSION:

In our research, the mishaps on the road were the main factor of intense abdominal injuries along with injuries to the kidney as a most general affected organ of the body. The ratio of abrupt abdominal injuries was greater in males with reference to females as well as twelve to thirty-five-year age category was the general most age category affected by abrupt abdominal injuries.

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