



ORIGINAL RESEARCH PAPER

General Surgery

"A STUDY ON SOLID ORGAN INJURY IN BLUNT ABDOMINAL TRAUMA IN RURAL POPULATION."

KEY WORDS: solid organ Injury, blunt abdominal trauma , rural population , management determinants.

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ABSTRACT

Solid organ injury in blunt abdominal trauma in rural setting is not studied extensively .This was a institution based prospective study on etiology,presentation,management and outcome determinants to avoid untoward outcome and proper utilization of human and economic resources in future. In our study,80% of patients were male and belonging to the age group of 21-40 years.Most common solid organ involved was the spleen(46%) of which grade 4 injury was predominant.Liver was the next most common organ to be injured(34%).Most common surgical procedure performed was splenectomy[8]. Mortality rate in our study was 10%.Most of the complications were due to presence of co-morbidities,multiple injuries,presentation in state of shock,delay at presentation and lack of pre-hospitalisation score.

INTRODUCTION

Blunt^[4] abdominal trauma in rural areas is increasing day by day due to increased number of vehicles and violence.if a solid organ injury is missed in such an incident,it leads to significant morbidity and mortality ,thus to loss of human and economic resources^[5].Efforts should be made to identify the factors leading to outcome following blunt trauma abdomen. The management of solid organ injury is standardized,but factors determining outcome has not been established yet in rural settings.

MATERIALS AND METHODS:

After approval from ethics committee, a study was carried out on 50 patients who presented with Blunt Abdominal Trauma and found to have solid organ injury in the Department of General Surgery, BSMCH, Bankura from March 2016 to August 2017.Details regarding socio economic condition, current illness, mode of injury, co-morbidities,pre-hospitalisation, duration of stay and outcome were collected from BHT and questionnaire in predesigned proforma.

STATISTICAL ANALYSIS:

Data was tabulated in MS excel and statistical analysis was done by Chi-square test ,T test, cross tabulation analysis.

RESULTS:

Our study has shown that patients presented with shock at the time of presentation were associated with significant postoperative complication of 32% with p value 0.48.

Patients with multiple site of injury were also associated with more postoperative complication (38.57%) with p value of 0.013.

Patients with co-morbidities such as DM,HTN had post operative complications in 71.4% cases with p value 0.006.In our study mean time of presentation of patient to hospital was 20.10 hrs with minimum and maximum being 4 and 27 hrs respectively. Moratality rate in our study was 10%.

Table 1:ORGANS INJURED IN PATIENTS PRESENTING WITH BLUNT ABDOMINAL TRAUMA

Site	Frequency	Percent
Liver	17	34.0
Liver spleen	1	2.0
Lt kidney	2	4.0
Pancreas	2	4.0
Rt Kidney	3	6.0
Spleen	23	46.0

Spleen colon	1	2.0
Spleen kidney	1	2.0
Total	50	100.0

Table 2:SHOCK AT ADMISSION AND SUBSEQUENT COMPLICATIONS.

	Shock	Complications		Total	Fisher's Exact P value
		Yes	No		
Present	Count	5	11	16	0.486
	Expected Count	3.8	12.2	16.0	
	% within shock	31.2%	68.8%	100.0%	
Absent	Count	7	27	34	
	Expected Count	8.2	25.8	34.0	
	% within shock	20.6%	79.4%	100.0%	
Total	Count	12	38	50	
	Expected Count	12.0	38.0	50.0	
	% within shock	24.0%	76.0%	100.0%	

Table 3:DISTRIBUTION OF PRE HOSPITALISATION CARE AND COMPLICATION.

	Shock	Complications		Total	Fisher's Exact P value
		Yes	No		
Present	Count	7	21	28	0.852
	Expected Count	6.7	21.3	28.0	
	% within Pre hospitalization care	25.0%	75.0%	100.0%	
Absent	Count	5	17	22	
	Expected Count	5.3	16.7	22.0	
	% within Pre hospitalization care	22.7%	77.3%	100.0%	
Total	Count	12	38	50	
	Expected Count	12.0	38.0	50.0	
	% within Pre hospitalization care	24.0%	76.0%	100.0%	

Table 4: ASSOCIATED COMORBIDITY AND COMPLICATION.

	Comorbidity	Complication		Total	Fisher's Exact P value
		Yes	No		
Yes No	Count	5	2	7	0.006
	Expected Count	1.7	5.3	7.0	
	% within Comorbidity	71.4%	28.6%	100.0%	

	Count	7	36	43	
	Expected Count	10.3	32.7	43.0	
	% within Comorbidity	16.3%	83.7%	100.0%	
Total	Count	12	38	50	
	Expected Count	12.0	38.0	50.0	
	% within Comorbidity	24.0%	76.0%	100.0%	

Table 5:NUMBER OF INJURY AND COMPLICATION:

	Number of injury	Complication		Total	Chi-square P value
		Yes	No		
SINGLE	Count	2	22	24	0.013
	Expected Count	5.8	18.2	24.0	
	% within Number of injury	8.3%	91.7%	100.0%	
MULTIPLE	Count	10	16	26	
	Expected Count	6.2	19.8	26.0	
	% within Number of injury	38.5%	61.5%	100.0%	
Total	Count	12	38	50	
	Expected Count	12.0	38.0	50.0	
	% within Number of injury	24.0%	76.0%	100.0%	

DISCUSSION:

Most solid organ injuries occurred under the age of 40 years, automobile accidents being the commonest.^[1] In rural settings injury inflicted by animals is also worth mentioning (10%). Spleen^[2,3] was the commonest organ to be injured (46%) followed by liver(34%). Non operative management^[6] of blunt abdominal trauma is well established based on haemodynamic stability and radiological findings. Mortality(10%) was mostly due to sepsis, burst abdomen seen especially in patients with multiple injuries, associated co morbidities, delayed presentation^[7], lack of prehospitalisation care.

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