



Comorbid conditions as a predictor of outcomes in emergency exploratory laprotomy in geriatric patients

Dr. Ajay Joshi	Professor, Department of general surgery, index medical college, indore
Dr, Sanjay Patidar	Assistant Professor, Department of general surgery, index medical college, indore
Dr. Sankalp Srivastava	P.G. Resident 3 rd year, Department of general surgery, index medical college, indore
Dr. Sani Pasrija	P.G. Resident 3 rd year, Department of general surgery, index medical college, indore
Dr Etta Praneeth	P.G. Resident 2 nd year, Departmentof general surgery, index medical college, indore
Dr. Bhajan Lilhare	P.G. Resident 3 rd year, Department of T.B. & Chest, index medical college, indore

ABSTRACT	Aim - comorbid conditions as a predictor of outcomes in emergency exploratory laprotomy in geriatric patients. Material & Methods - A Prospective study of 50 patients of age 65 years & above, who underwent emergency exploratory laprotomy under any anaesthesia in index medical college, hospital & research centre from 1st january2015 to 31 july2016 were included. Result -Out of the 50 patient admitted ,mean age was 71 years and the inhospitality mortality rate was 16%. comorbid conditions like hypertension, diabetes mellitus, COPD, IHD etc had statistically significant increase in rate of morbidity & mortality. American society of Anaesthesiologist Score (ASA) were independent predictors of postoperative mortality. chronological age alone did not have significant association with mortality. Conclusion - Preoperative investigations, physical fitness, optimization, good peri-operative care & treatment of complications is important to reduce the peri-operative morbidity & mortality. ASA class is a specific tool which is predictive of mortality in laprotomy surgeries.
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KEYWORDS

INTRODUCTION
Geriatric population includes people who are 65 years or more of age. Geriatric population is slowly & steadily growing segment of population. The world's population is ageing. By 2025, the world's population is expected to include more than 830 million people at an age of 65.

Geriatric population is often associated with comorbid factors like DM, HT, IHD, Asthma, etc. which increases the risk for anaesthesia and affects the surgical outcome

clinical presentation and the natural history of disease in older patients may differ as in young patients which often lead to misdiagnosis & delay in treatment. Hence patients present with acute complication as a first indication of disease & many times require an emergency operative treatment. So as the number of older patient increases it becomes important for every surgeon to have detailed understanding by examination of the morbidity and comorbidity profiles among the elderly and an evaluation of the related factors are required to improve the delivery of health care.

Material & Methods
50 patients of age 65 years & above, who underwent emergency exploratory laprotomy under general/epidural/spinal anaesthesia in our institute were included in this study. All geriatric patients admitted to surgery department of index medical college and research centre indore, were studied by taking complete history & doing physical examination and laboratory & radiological investigation.

The observations of the study was analysed using the Statistics Package for Social Science (SPSS version 16.0; Chicago, Inc., USA) software. The Chi- square test was used to compare the categorical variables. The relative risk with its 95% confidence

interval (CI) was calculated to find the association of mortality with various study factors. Statistical significance was set at P < 0.05.

Observation and Discussion

Table-1: Relation between ASA (American Society of Anaesthesiologist) class and outcome

ASA scale	Outcome				Total	
	Mortality		Alive		No.	%
	No.	%	No.	%		
Class 1	0	0.0	18	100.0	18	36.0
Class 2	2	14.28	12	85.71	14	28.0
Class 3	2	25	6	75	8	16.0
Class 4	4	40	6	60	10	20.0
Total	8	16	42	84	50	100.0

$\chi^2=14.50, p=0.002$ (Significant)

Table-1 & Fig.1 shows the relation between ASA and outcome of the cases. The mortality was higher among the cases of ASA class 4 (40%) than Class 3 (25%) and Class 2 (14.28%).

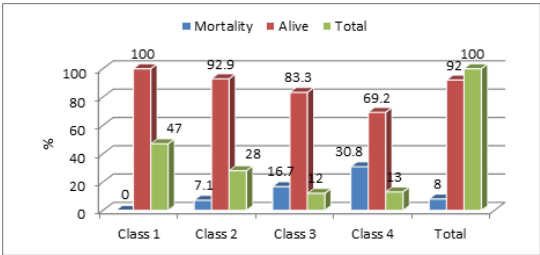


Table-2: Relation between type of co-morbidity with outcome

Type of Co-morbidity	Mortality		Alive		Total	
	No.	%	No.	%	No.	%
Hypertension	2	5.0	38	95.0	40	40.0
Diabetes mellitus	1	3.7	26	96.3	27	27.0
Ischaemic heart disease	1	11.1	8	88.9	9	9.0
Chronic Obstructive pulmonary disease	2	25.0	6	75.0	8	8.0
Central Nervous System & Neuromuscular Disorders	0	0.0	2	100.0	2	2.0
Renal disease	2	20.0	8	80.0	10	10.0
Others	0	0.0	4	100.0	4	4.0

X²=6.90, p=0.33

Table-2 & Fig.2 shows the relation between type of co-morbidity with outcome. Hypertension was found to be most common co-morbidity among the cases followed by diabetes mellitus (27%). The mortality was observed to higher in chronic Obstructive pulmonary disease (25%) than renal disease (20%), Ischaemic heart disease (11.1%), Hypertension (5%) and diabetes mellitus (3.7%). However, the trend was found to be statistically not significant (p>0.05).

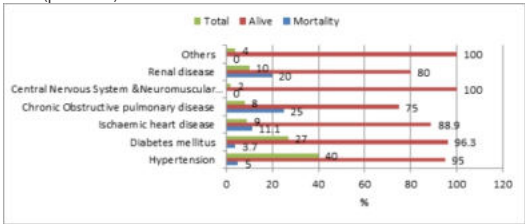


Table-3: Relation between Hypertension (HTN) and complications with outcome

Hypertension (HTN) and complications	Mortality		Alive		Total	
	No.	%	No.	%	No.	%
HTN with complications	2	20.0	8	80.0	10	25.0
HTN without complications	0	0.0	30	100.0	30	75.0
Total	2	5.0	38	95.0	40	100.0

RR (95%CI)=4.75 (2.56-8.79), p=0.0001 (Significant)

Table-3 & Fig.3 shows the Relation between Hypertension (HTN) and complications with outcome. The mortality was found to be 20% among the cases of HTN with complications and nil among the cases of HTN without complications. The mortality was 4.75 times significantly higher among the cases of HTN with complications than HTN without complications

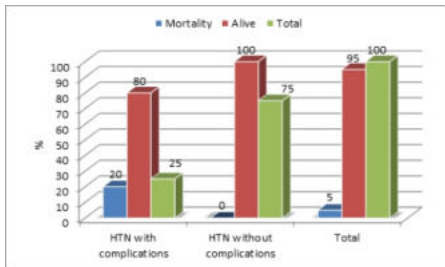


Table-4: Relation between Diabetes Mellitus (DM) and complications with outcome

Diabetes Mellitus (DM) and complications	Mortality		Alive		Total	
	No.	%	No.	%	No.	%
DM with complications	1	10.0	9	90.0	10	37.3
DM without complications	0	0.0	17	100.0	17	62.7
Total	1	3.7	26	96.3	27	100.0

RR (95%CI)=2.88 (1.70-4.89), p=0.0001 (Significant)

Table-4 & Fig.4 shows the Relation between DM and complications with outcome. The mortality was found to be 10% among the cases of DM with complications and nil among the cases of DM without complications. The mortality was 2.88 times significantly higher among the cases of DM with complications than DM without complications

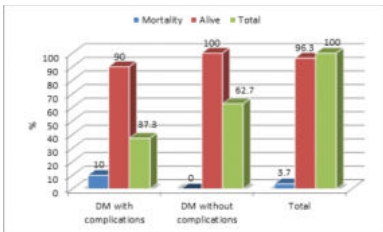


Table-5: Relation between Ischemic Heart Disease (IHD) and complications with outcome

Ischemic Heart Disease (IHD) and complications	Mortality		Alive		Total	
	No.	%	No.	%	No.	%
IHD with complications	1	20.0	4	80.0	5	55.5
IHD without complications	0	0.0	4	100.0	4	44.5
Total	1	11.1	8	88.9	9	100.0

RR (95%CI)=2.00 (1.00-3.99), p=0.05

Table-5 & Fig.5 shows the Relation between IHD and complications with outcome. The mortality was found to be 20% among the cases of IHD with complications and nil among the cases of IHD without complications. The mortality was 2.00 times nearly significantly higher among the cases of IHD with complications than IHD without complications.

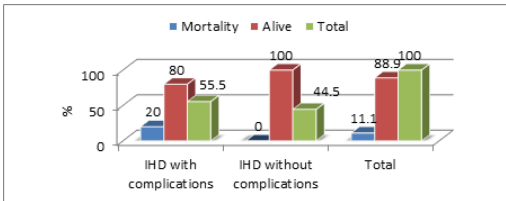


Figure 5

Table-6: Relation between Chronic Obstructive Pulmonary Diseases (COPD) and complications with outcome

Chronic Obstructive Pulmonary Diseases (COPD)	Mortality		Alive		Total	
	No.	%	No.	%	No.	%
COPD with complications	2	50.0	2	50.0	4	50.0
COPD without complications	0	0.0	4	100.0	4	50.0
Total	2	25.0	6	75.0	8	100.0

RR (95%CI)=3.00 (0.96-9.30), p=0.06

Table-6 & Fig.6 shows the Relation between COPD and outcome. The mortality was found to be 50% among the cases of COPD with complications and nil among the cases of COPD without complications. The mortality was 3.00 times insignificantly higher among the cases of COPD with complications than COPD without complications

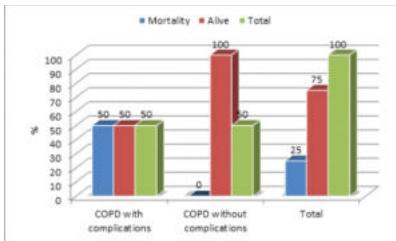


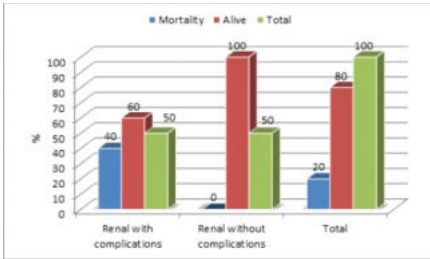
Figure 6

Table-7: Relation between Renal co-morbidities and complications in study group

Renal	Mortality		Alive		Total	
	No.	%	No.	%	No.	%
Renal with complications	2	40.0	3	60.0	5	50.0
Renal without complications	0	0.0	5	100.0	5	50.0
Total	2	20.0	8	80.0	10	100.0

RR (95%CI)=2.66 (1.09-6.52), p=0.03 (Significant)

Table-7 & Fig.7 shows the Relation between renal co-morbidities and outcome. The mortality was found to be 40% among the cases of renal co-morbidities with complications and nil among the cases of renal co-morbidities without complications. The mortality was 2.66 times significantly higher among the cases of renal co-morbidities with complications than renal co-morbidities without complications



Result

During 16 months studied a total of 50 patients aged 65 or more were admitted for emergency general surgery underwent exploratory laprotomy. Mean age was 71 years and M-F ratio was 1:0.43

We quantified the burden of comorbidities using ASA class & 18 patients belonged to ASA class III & IV. This was observed that with increase in ASA class & Comorbidity index there is increase in mortality.

It was seen that comorbidities like HT, DM,COPD, IHD etc. carried a statistically significant association with outcome. Patient presenting with comorbid factors associated with significant increase in morbidity & mortality.

Overall mortality rate was 16%. The mortality was found to be significantly higher among those type of surgery was having high comorbidity index. There was no clear relationship between chronologic age with post-operation outcome and mortality is markedly increases with rising ASA class specially patient with ASA class-4 had the highest rise of death which means surgeons can use this information preoperatively used to give estimates of death n morbidity to patients and families.

Conclusion

Emergency surgeries are associated with poor outcome so awareness must be for geriatrics patients & their family to diagnose early symptoms, rather than it presents as an Emergency to undergo surgery.

Burden of comorbidities like HT, DM, IHD, anemia, etc. must be taken into consideration as these are the factors associated with poor outcome.

Good peri-operative care & prompt attention & treatment of complications in the peri-operative period is of vital importance to reduce the perioperative mortality.

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