Surgery

A COMPARATIVE STUDY BETWEEN GLASGOW V/S MODIFIED GLASGOW SCORE IN PROGNOSIS OF ACUTE PANCREATITIS

| Kumar Premjeet Madhukar | Assistant Professor Department of Surgery K.J. Somaiya Medical College and Hospital, Sion, Mumbai-22. |
| Lakin Vira* | Assistant Professor Department of Surgery K.J. Somaiya Medical College and Hospital, Sion, Mumbai-22. *Corresponding Author |

ABSTRACT The pathologic spectrum of acute pancreatitis varies from oedematous pancreatitis which is self limiting to necrotising pancreatitis, in which the degree of pancreatic necrosis correlates with the severity of the attack and its systemic complications. Therefore although some of the clinical features are common in all types of pancreatitis, it is important to determine the degree and stage of pancreatic involvement and the involvement of other systems to highly individualize the management of patients with pancreatitis. The aim was to study the use of Glasgow score v/s modified Glasgow score in prognosis of acute pancreatits.

KEYWORDS : Acute Pancreatitis, Necrosis, Glasgow Score

Introduction

Acute pancreatitis is a disease with variable clinical spectrum from mild self limiting disease to shock, sepsis, multiorgan failure and leading to rapid deterioration and death. It has numerous causes and obscure pathogenesis, few effective remedies and often an unpredictable outcome.[1] Acute pancreatitis still continues to constitute major challenge to physicians and surgeons despite recent advances in methods of diagnosis and management. Moynihan (1985) aptly described the dramatic nature of acute pancreatitis as the most terrible of all calamities that occur in connection with the abdominal viscera. The suddenness of its onset, the illimitable agony which accompanies it and the mortality attendant upon it render it most formidable of catastrophes.[2]

Results:

Table No 1: Association between Glasgow Score (On admission) and Outcome among study group:

Outcome		Glasgow Score (Admission)					Total
		0	1	2	3	4	
Expired	Count	0	1	0	2	1	4
	Percent	0	10	0	50	50	8
Recovered	Count	33	9	1	2	1	46
	Percent	100	90	100	50	50	92
Total	Count	33	10	1	4	2	50
	Percent	100	100	100	100	100	100

Chi-Square Tests	Value	Df	p value	Association is
Pearson Chi-Square	17.39	4	0.0016	Significant

8 cells (80.0%) have expected count less than 5. The minimum expected count is .08.

Table No 2 : Association between Modified Glasgow Score (On admission) and Outcome among study group:

Outcome		Modified Glasgow Score (Admission)						Total
		0	1	2	3	4	6	
Expired	Count	0	1	0	0	0	3	4
	Percent	0	6.67	0	0	0	100	8
Recovered	Count	21	14	3	6	2	0	46
	Percent	100	93.33	100	100	100	0	92
Total	Count	21	15	3	6	2	3	50
	Percent	100	100	100	100	100	100	100

Chi-Square Tests	Value	df	p value	Association is
Pearson Chi-Square	37.32	5	5.17E-07	Significant

9 cells (75.0%) have expected count less than 5. The minimum expected count is 16

Table No 3 : Association between Glasgow Score (At 48 Hrs) and Outcome among study group:

Outcome		Glasgow Score (At 48 Hrs)						Total
		0	1	2	3	5	6	
Expired	Count	0	0	0	1	2	1	4
	Percent	0	0	0	50	100	100	8
Recovered	Count	27	11	7	1	0	0	46
	Percent	100	100	100	50	0	0	92
Total	Count	27	11	7	2	2	1	50
	Percent	100	100	100	100	100	100	100

Chi-Square Tests	Value	df	p value	Association is
Pearson Chi-Square	43.21	5	3.36E-08	Significant

9 cells (75.0%) have expected count less than 5. The minimum expected count is .08.

Table No 4 : Association between Modified Glasgow Score (At 48 Hrs) and Outcome among study group:

Outcome		Modified Glasgow Score (At 48 Hrs)					Total
		0	1	2	3	5	
Expired	Count	0	0	0	1	3	4
	Percent	0	0	0	100	100	8
Recovered	Count	27	11	8	0	0	46
	Percent	100	100	100	0	0	92
Total	Count	27	11	8	1	3	50
	Percent	100	100	100	100	100	100

Chi-Square Tests	Value	df	p value	Association is
Pearson Chi-Square	50	4	3.61087E-10	Significant

7 cells (70.0%) have expected count less than 5. The minimum expected count is .08.

Discussion:

This study was carried out on 50 patients of acute pancreatitis admitted to public General Hospital in Mumbai between July 2014 to September 2017.

In 1984 **Imeri** developed **(Glasgow scale scoring)**[3] :

It was a system intended to define patients with severe disease with improved accuracy

On admission
- Age > 55yrs
- WBC >15000/cmm
- Glucose>10mmol/L
- Urea>16mmol/L
- PAO2<60mmHg

Within 48 hours
- S Calcium<2mmol/L
- S Albumin<32g/L
- LDH>600IU/L
- AST/ALT>200IU/L

Modified Glasgow Scoring Scale
The original system used 9 data elements. This was subsequently modified to 8 data elements, with removal of assessment for transaminase levels (either AST (SGOT) or ALT (SGPT) greater than 100 U/L).[4]

Modified Glasgow Score for Pancreatitis	
Variable	Score one point if present
age	>55 years
pO2	<8.0 kPa
WCC	>15x10^9/litre
Ca^{2+} (uncorr.)	<2.0 mmol/L
ALT	>100 IU
LDH	>600 IU
glucose	>10 mmol/L
urea	>16 mmol/L
albumin	<32g/L

The criteria for point assignment is that a certain breakpoint be met at anytime during that 48 hour period, so that in some situations it can be calculated shortly after admission. It is applicable to both biliary and alcoholic pancreatitis.

3 or more positive factors detected within 48 hours of onset suggest severe pancreatitis, refer to HDU/ICU.

We calculated Glasgow score on admission and at 48 hours of admission. 33(66%), and 27(54%) patients had score 0 on admission, and at 48 hours respectively. 10(20%) and 11(22%) had score 1 on admission and at 48 hours, 1(2%) and 7(14%) had score 2 on admission and at 48 hours. Only 6 (12%) and 5(10%) had score of 3 or more on admission and at 48 hours respectively. While according to modified Glasgow Score 11(22%) and 4(8%) were having score of 3 or more on admission and at 48 hrs respectively. 46(92%) patients recovered and 4(8%) expired. Average Glasgow score was 0.79 and average Modified Glasgow Score was slightly higher i.e. 1.1. The reason for low score could be as follows:

1. All patients with age above 55 were excluded from our study with average age of 38.54 years.
2. Blood sugar more than 200mg/dl were found only in 6 patients.
3. SGOT more than 250IU/L was seen only in 7 patients.
4. LDH more than 600 IU/L was seen only in 7 patients.
5. None of our patients had critical partial pressure of oxygen less than 60 mm at 48 hours.

In Modified Glasgow Scoring system only one set of criteria is used at a single point of time unlike Glasgow Scoring System where two different set of criteria is used on admission and at 48 hrs. In this study association of outcome was significant with both Glasgow and Modified Glasgow Scoring System. Furthermore patient having severe pancreatitis were having higher score at 24 hrs according to Modified Glasgow Scoring System in comparison to Glasgow Scoring System while the score was almost comparable at 48 hrs.

Conclusion:
Average Glasgow score was 0.79 and average Modified Glasgow Score was slightly higher i.e. 1.1. . On applying Glasgow Score 6 (12%) and 5(10%) had score of 3 or more on admission and at 48 hours respectively. While according to modified Glasgow Score 11(22%) and 4(8%) were having score of 3 or more on admission and at 48 hrs respectively. 46(92%) patients recovered and 4(8%) expired.

Modified Glasgow Scoring System is a good prognostic criteria having single set of criteria and is used at a single point of time. It is probably better predictor of severity of acute pancreatitis on admission in comparison to Glasgow Scoring System.[5]

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