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Role of traditional scoring systems apache 2 and Ranson's in predicting severity of acute pancreatitis

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Abstract
Introduction: Acute pancreatitis is a commonly encountered disease in general practice. Acute pancreatitis is an acute inflammatory process of the pancreas with varying involvement of other regional tissues or remote organ systems. In 1889 Reginald Fitz gave the classic clinical and pathological description of acute pancreatitis. The incidence of acute pancreatitis per 100,000 population ranges from 5.4 to 79.8 cases per year. **Materials and methods:** The present study was an observational retrospective study. 22 diagnosed cases of acute pancreatitis admitted in Silchar Medical College and Hospital (medicine and surgery department) were included in study. Study period was from 1st January 2020 to 31st March 2020. The required lab investigations and clinical parameters were evaluated and RANSON'S and APACHE 2 scoring was done. The final scores of the patients from both the scoring systems were assessed to know their efficacy in predicting the severity of the disease. **Results:** Out of 22 patients 13(59.09%) were men and 9(40.97%) were women. The causes of acute pancreatitis included billiary stone 9(40.97%), alcoholism 7(31.81%), idiopathic 6(27.27%). Out of 22 patients admitted, 5 patients eventually went on to develop severe acute pancreatitis in the form of systemic and local complications. According to Ranson's score 2 patients had score >3 suggesting that only 9.09% were considered severe pancreatitis. **Conclusion:** APACHE 2 scoring system had a better predicting value as compare to Ranson's score. APACHE 2 was more easier to perform quick and accurate as compare to Ranson's for predicting complications. Patients with APACHE 2 score >10 benefited by initial ICU care and aggressive therapy. Hence APACHE 2 scoring can be used as a reliable tool in predicting severity of acute pancreatitis as compared to Ranson's scoring.
Key Words: Acute pancreatitis, RANSON'S and APACHE 2 scoring, ICU care.

Introduction

Acute pancreatitis is a commonly encountered disease in general practice. Acute pancreatitis is an acute inflammatory process of the pancreas with varying involvement of other regional tissues or remote organ systems[1]. In 1889 Reginald Fitz gave the classic clinical and pathological description of acute pancreatitis. The incidence of acute pancreatitis per 100,000 population ranges from 5.4 to 79.8 cases per year[2,3].In majority of patients 80-90% it is self limiting and remaining 10-20% develop complications. The average mortality rate is 2-10%[4,5].Different scoring system has been used for the assessment of severity of acute pancreatitis[6]. Aim of this study is comparing the two traditional scoring system RANSON'S and APACHE 2 in predicting severity of acute pancreatitis.

Materials and methods
Study design
An observational retrospective study.

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Study location
Department of General Surgery, Silchar Medical College and Hospital, Ghungoor, Silchar, Assam, India.
Study duration
1st january2020 to 31st march 2020.
The present study was an observational retrospective study.
22 diagnosed cases of acute pancreatitis admitted in Silchar Medical College and Hospital (medicine and surgery department) were included in study.
Study period was from 1st january2020 to 31st march 2020.
The required lab investigations and clinical parameters were evaluated and RANSON'S and APACHE 2 scoring was done.
The final scores of the patients from both the scoring systems were assessed to know their efficacy in predicting the severity of the disease.
Inclusion criteria
All patients diagnosed with acute pancreatitis based on clinical, radiological and laboratory findings.
Exclusion critera
➢ Hyperamylaesemia due to other causes
➢ Chronic pancreatitis
➢ Acute on chronic pancreatitis
Previously diagnosed case of acute pancreatitis.

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Results

Out of 22 patients 13(59.09%) were men and 9(40.97%) were women.

NO OF CASES

9

22
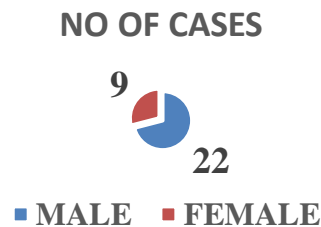
■ **MALE** ■ **FEMALE**

Fig 1: Age Distribution

The causes of acute pancreatitis included billiary stone 9(40.97%), alcoholism 7(31.81%), idiopathic 6(27.27%).

Out of 22 patients admitted, 5 patients eventually went on to develop severe acute pancreatitis in the form of systemic and local complications. According to Ranson's score 2 patients had score >3 suggesting that only 9.09% were considered severe pancreatitis.

Table 1: RANSONS scoring system result

SCORE	FREQUENCY	PERCENTAGE
<3	20	90.9%
3-4	2	9.09%
5-6	NIL	-
>6	NIL	-
TOTAL	22	100%

(SCORE >3 Suggest severe pancreatitis)

Overall 5(22.7%) patients suffered from severe acute pancreatitis and 17(77.27%) suffered from mild acute pancreatitis as per APACHE 2 scoring system.

Table 2: APACHE 2 scoring system results

SCORE	FREQUENCY	PERCENTAGE
0-5	16	72.7%
6-10	4	18.18%
11-15	2	9.09%
>15	NIL	-
TOTAL	22	100%

Discussion

The main management of acute pancreatitis is early prediction of severity of disease[7].The aims of the study were to early severity classification, complication and outcome in acute pancreatitis[8].The two early risk factors for death in acute pancreatitis are increasing age and hypotension at the time of admission.Severe acute pancreatitis manifest with in short period of time after the onset of symptoms.It is important to early assessment of severe acute pancreatitis for the patient who may benefit from additional supportive and specific therapeutic procedure[9].Therefore ideal predicting criteria should be simple non invasive, accurate, quantitative and assessment test should be readily available at the time of diagnosis[10].Sensitivity of APACHE 2 was 100% and Ranson's was 66.7%, specificity of APACHE 2 was 80% and Ranson's 86.7%.In our study APACHE 2 score showed 5 patients (22.72%) suffered acute severe pancreatitis and 17 patients (77.27%) showed mild acute pancreatitis. Simultaneously Ranson's score showed 2 patients (9.09%) suffered severe pancreatitis and remaining 20 patients (90.91%) showed mild acute pancreatitis.This may be due to APACHE 2 system having more number of variables and also include chronic health status of the patient than Ranson's scoring system, so APACHE 2 is more accurate in predicting severity of pancreatitis.

Conclusion

APACHE 2 scoring system had a better predicting value as compare to Ranson's score. APACHE 2 was more easier to perform quick and accurate as compare to Ranson's for predicting complications. Patients with APACHE 2 score >10 benefited by initial ICU care and aggressive therapy. Hence APACHE 2 scoring can be used as a reliable tool in predicting severity of acute pancreatitis as compared to Ranson's scoring.

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