THE HARMLESS ACUTE PANCREATITIS SCORE (HAPS)

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ABSTRACT

Aims & objectives: As severe acute pancreatitis patients needs intensive care unit management while less severe cases are managed in General ward10. The aim of this study is to evaluate a simple clinical algorithm to identify mild cases of acute pancreatitis which do not require ICU management.

Method: This is a descriptive study including 84 patients admitted to gastroenterology unit HAYAT ABAD MEDICAL COMPLEX from 06-04-2011 to 12-03-2013. From initial evaluation of patients, 3 parameters i.e. No Guarding or Rebound tenderness, Normal Haematocrit level, & normal Serum Createnine Level are combined to from HARMLESS ACUTE PANCREATITIS SCORE (HAPS). This shows the strongest prediction of Non severe acute pancreatitis.

Results: HAPS correlated with non severe course of the disease and correctly identified harmless course in 70(97.2%) out of 72.

Conclusion: HAPS identifies patients, whose disease will follow mild course with 97.2% accuracy, with in 30 to 60 minutes of admission. These patients can be managed in general ward rather than in ICU & hence will reduce hospital's expenses in managing such patients.

Keywords: Acute pancreatitis, Guarding, Rebound tenderness, Createnine, Haematocrit.

INTRODUCTION

Acute pancreatitis is an acute inflammatory process of pancreas with variable involvement of other regional tissues or remote organ system. It is best defined clinically by a patient presenting with any two of the following three[1].

i. Symptoms such as epigastric pain consistent with the disease

ii. S. Amylase or Lipase greater than 3 times the upper limit normal.

iii. Radiologic imaging consistent with the diagnosis

Patients are classified as having mild or severe disease; mild disease consists of interstitial (or edematous) pancreatitis, on imaging minimal or no extrpancreatic organ dysfunction & an uneventful recovery.

Severe disease manifests as organ failure or local complications as necrosis, abscess or pseudocyst. Severe acute pancreatitis is managed at intensive care unit. On admission it is difficult to predict that a given patient will follow mild or severe course. A number of scores have been developed to identify cases of severe disease, but these scores are insufficiently sensitive, cumbersome, not readily available at all centers & take longer time for completion. Therefore a simple scoring system HAPS is evaluated to identify at admission those cases which will follow mild course rather than severe disease.

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MATERIAL & METHOD

This study was conducted on patients admitted to Gastroenterology Unit Hayatabad Medical Complex (HMC) from 06-04-2011 to 12-03-2013. It is a descriptive study. Complete history & physical examination was carried out. The diagnosis of acute pancreatitis was based on any two of the following three features[10].

i. Typical history of pain upper abdomen radiating to the back

ii. Raised S.Amylase or lipase level three or more than three times the upper limit normal

iii. Radiologic findings suggestive of Acute Pancreatitis

All patients were interviewed in detailed & then examined thoroughly followed by relevant investigations.

Characteristic signs:

Epigastric tenderness or rebound tenderness & guarding were evaluated; special attention was given to Hydration status & cardiovascular status. Complete investigations like complete blood count, Haematocrit level, Liver Function Test, Renal Function Test, S.ELECTROLYTES were carried out & other biochemical markers eg. Random Blood Sugar, Serum Calcium, Serum Magnesium. Arterial Blood Gases Level etc.

X.Ray chest & abdomen , ECG, U/S Abdomen & pelvis, C.T Abdomen with Pancreatic protocol[2]. MRCP if needed were done. Etiologies of acute pancreatitis

in this study were Gall stones, trauma, worms in CBD, Mass in head of pancreas & post ERCP pancreatitis. All patients were managed according to international protocol. All parameters of severity were rechecked at regular interval such as clinical assessment, haematocrit level (abnormal > 43% for men & >39.6% in women).

Blood Glucose level (abnormal>125mg/dl),

Arterial PaO_2 (abnormal <= 60 mmHg),

S.Creatinine level (abnormal>=2mg/dl)[10].

Severe disease was defined as presence of necrosis as assessed by contrast enhanced CT (Balthazar score >=5 points)[2] or Need of artificial ventilation or dialysis. Non severe (harmless) course means no necrosis (Balthazar core <=4). No need of artificial ventilation or dialysis. No organ dysfunction and no local or distant complication. A total of 84 patients were registered during the study period.

Of the base line characteristics that were recorded at the time of initial evaluation of 84 patients, three characters i.e.

I. absence of rebound tenderness/ guarding

II. Normal createnine level <2 mg/dl

III. Normal haematocrit (<43% for men & 39.6% for women) were the strongest predictors of lack of severity.

Therefore these 3 parameters were combined to form the HAPS (Harmless Acute Pancreatitis Score).

RESULTS

Out of the total 84 registered patients from 06-04-2011 to 12-03-2013, 36 were male & 48 were female, with age distribution from 15 to 65 years. Out of 84 cases HAPS score initially identified that 72 patients will follow mild course, but later on two patients from this category followed severe course. So specificity is 97.2% i.e 70 cases out of 72.

DISCUSSION

Large numbers of research papers have been written on various parameters, biochemical markers to predict sever acute pancreatitis. On examination palpable abdominal mass fever ileus tachycardia hypotension & skin signs[11] all are related to sever acute pancreatitis. X-Ray chest may show pleural effusion[12] or pulmonary infiltrates[13] as signs of severe disease. Old age with associated co morbidities are associated with high mortality rate[9,17]. Contrast enhanced CT shows organ destruction but it says nothing about overall course of the disease organ destruction & failure does not run parallel in acute pancreatitis[14,15]. Similarly various scoring systems have been developed to predict severe acute pancreatitis but none of these scoring systems have clinical significance because of low reliability or higher complexity[5]. An example of these scoring systems is

Table 1

S No	Cause of Acute Pancreatitis	No of Patients
1	Gall Stones	40
2	Idiopathic	22
3	Trauma/ post ERCP	12
4	Worms in CBD	6
5	Mass in Pancreas	4
	Total	84

Total cases =84
Initially classified as Mild =72 cases= 85.8% of total
Initially classified as severe cases=12 cases =14.2% of total
Out of 72 cases that were initially classified as mild, only 70 cases followed Mild course i.e. 97.2 %
While only 2 cases followed severe course out of these 72 =2.7%

Ranson's Scoring System[3] for predicting severe acute pancreatitis, but it has several drawbacks first of all it is cumbersome & requires two lists to be followed for Alcoholic & Gall stone pancreatitis, second shortcoming compared to HAPS is the fact that an accurate Ranson's score takes 48 hours to complete & beyond 48 hours it has not been validated so a lot can happen up to 48 hours. Third not all labs measure all of the parameters in routine blood tests. Fourth overall sensitivity of Ranson's criteria[3] (using three signs as cut off) for diagnosing severe disease is only 40-88% & specificity 43%-90%.

APACHE II[6] scoring system for predicting severe acute pancreatitis has several draw backs such as its complexity, its low sensitivity on admission & at 48 hrs it is not better than other scoring systems. Similarly other scoring systems designed for predicting severe disease suffer from certain drawbacks. Atlanta criterion is used for clinical classification of acute pancreatitis but it does not differentiate between persistent & transient organ failure[16].

As severe acute pancreatitis comprises 10-15% of total cases of acute pancreatitis, remaining follow mild course. So HAPS is designed to predict patients which will follow mild course. HAPS is easy to perform because it is comprised of epigastric guarding or rebound tenderness. Haematocrit value & S.Creatinine at admission or first presentation of patient.

Examination of patient takes few minutes; similarly all hospital labs perform haematocrit & S.Creatinine all the time day & night. Its results are available within 30-60 minutes. So HAPS is completed within 1st an hour of presentation of the patient to hospital. As it has high specificity in predicting mild course so it is possible to decide whether the patient should be retained in general ward or be sent to intensive care unit for management & thus saves or reduces the cost of managing the patient and helps in proper management of specific patients.

CONCLUSION

HAPS helps us to differentiate mild acute pancreatitis from severe acute pancreatitis (i.e. determines which patients will follow mild course) on initial presentation and hence reduces the cost of management.

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