Original Article

C-Reactive Protein Elevation in Patients With Acute Pancreatitis

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ABSTRACT

Objective: To find out the frequency of CRP elevation in patients having severe acute pancreatitis at tertiary care Hospital.

Study Design: Cross-sectional study

Place and Duration of Study: This study was conducted at the Surgery Department of LUMHS from September 2015 to March 2016.

Materials and Methods: Total 60 selected for the study and informed consents were taken. All the patients of acute pancreatitis were selected for study while patients with other severe co-morbidities and other infections were not selected. C-reactive was noted in all the cases by blood test from diagnostic laboratory. Patients who had other co morbidities were excluded from the study. All the information was gathered on self-designed proforma regarding age, gender, clinical features, c reactive protein etc.

Results: Total 61 patients were included in the study. Mean age was 32±2.04. 13(20.1%) patients belonged to age group of <30 years while 18(30%) patients were from 30-40 years of age group. 45(75%) patients were females while 15(25%) were males. According to the cause of acute pancreatitis cholilithiasis was the most common in 33.34% of the cases, alcohol consumption was in 16.6%. 45(75%) patients with cholecystitis had raised c reactive protein while 15(25%) had normal c reactive protein. CRP is the good noninvasive diagnostic tool for acute pancreatitis.

Conclusion: We concluded that CRP elevations is the good and noninvasive diagnostic tool for pancreas inflammation with good efficacy

Key Words: C-Reactive Protein, Pancreatitis.

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INTRODUCTION

Acute pancreatitis is the commonest diseases of GI tract, prominent to incredible, physical and the financial burden.[1,2] In 2009 in US acute pancreatitis the commonest gastroenterological diagnosis with 2.6 billion dollars cost.[2] Despite the fact that the illness procedure might be constrained to pancreatic tissue, it additionally can include peripancreatic tissues or more reserved organ locations. Acute pancreatitis may happen as a segregated assault or might be recurrent. It has an assortment of causes and can run in seriousness from gentle to extreme and life threatening. A few patients may require prolonged hospital stay, while others might be fundamentally sick with numerous organ dysfunctions requiring ICU observing. Mild acute pancreatitis having very less rate of mortality as well as < 1%,[3] While the mortality is significantly associated with severe acute pancreatitis estimately 10 to 30% containing on the occurrence of non-infected versus infected necrosis.[4] In United States, up to 210,000 cases for each year are admitted in the hospitals due to acute pancreatitis. Hallmark symptom of the acute pancreatitis is an onset of acute pain of upper abdomen, with nausea and the vomiting frequently. Frequent locations of the pain are umbilical region and epigastrium regions. Pain may originate to back side, trunk, flanks, and lower part of the abdomen. CRP is a generally utilized diagnostic tool for emergency, particularly in febrile and equivocal infective cases. It was distinguished in 1930 and was in this manner arranged into an "acute phase protein". CRP may be significant in the evaluation and diagnosis of the acute. C receptive protein reactions and progression rate in the acute pancreatitis reflect distinctive severities. CRP large concentrations more than 10mg/dL sustained in the severe attack, and give the cautions of following strict local inflammations in cases whose early disease is comparatively mild and clinical course is at first generous. ESR can also predict the severity of the acute pancreatitis with a somewhat substandard implementation to CRP. Consolidated ESR and CRP at twenty four hours can perfectly predict the severity of acute pancreatitis[5]. For pancreatitis, CRP is an evaluation tool to assess the pancreatic severity. Truly we can't recognize the bacteremia from the non-bacteremia illness through CRP level, and doctors must

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take the definite history of fever onset to enhance the accurate prediction of the bacteremia before the blood culture findings came out[6]. Acute-phase reactant CRP is presently the serum variable of the choice to early, perfect and cost effective assessment of the severity of in routine clinical practice of acute pancreatitis. Very few studies on this aspect are conducted in our setup so we aimed to find out the association between c reactive protein elevations in patients with acute pancreatitis.

MATERIALS AND METHODS

This cross-sectional study was conducted in surgery department of LUMHS from 2015 to 2016. Total 60 patients were included in the study after taking informed consent. In this study all the patients with diagnosis of acute pancreatitis were selected. Acute pancreatitis was confirmed by CT scan and C reactive protein had assessed through taking 2CC venous blood and referred to the Hospital diagnostic laboratory. All the patients with history of any severe co morbidities and any other inflammatory disease were not selected. All the cases were diagnosed according to the presenting sign and symptoms and according to the serum amylase level and lipase levels. After those patients in whom diagnosis had confirmed, through serum CRP elevation after 2nd day of admission and all and by abdominal contrast enhanced CT scan after 72 hours of admission. All the information was gathered on self-designed proforma regarding age, gender, clinical features, c reactive protein etc and in SPSS analyzed.

RESULTS

Total 60 were studied. Mean age was 32±2.04. 13(20.1%) patients belonged to age group of <30 years while 18(30%) patients were from 30-40 years of age group. 45(75%) patients were males while 15(25%) were females. Table 1

According to the cause of acute pancreatitis cholilithiasis was the most common in 33.34% of the cases, alcohol consumption was in 16.6% patients while 40% cases were with multiple causes and 10% were unknown fig:1.

In this study, 45(75%) patients with cholecystitis had raised c reactive protein while 15(25%) had normal c reactive protein. Figure 2

Table 1:Age and gender distribution of the patients n=60

Age and gender	Number	Percentages
Agegroups		
< 30 years	12	(20%)
30-40 years	18	(30%)
>40 years	30	(50%)
Gender		
Males	45	(75%)
Females	15	(25%)

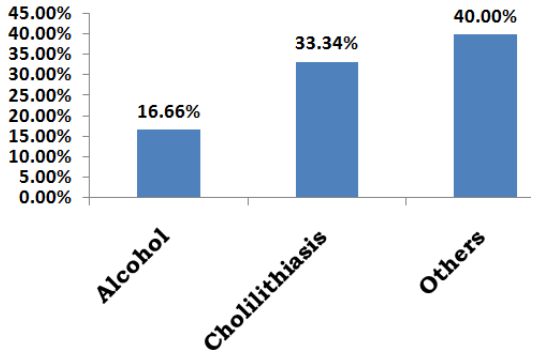

Figure No.1: Causes of acute pancreatitis n=60

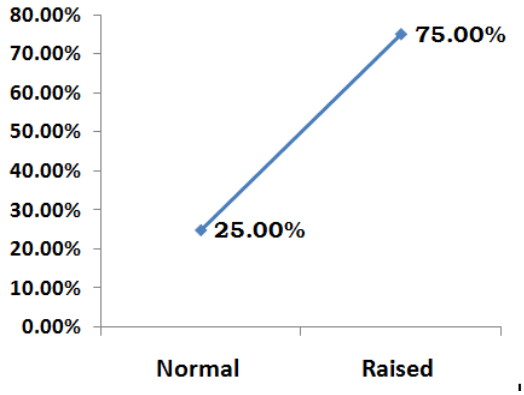

Figure No.2: Frequency of CRP elevation in patients with acute pancreatitis n=60

DISCUSSION

Acute pancreatitis is the condition in which sudden inflammation that goes on for a brief timeframe. It might run from mild to severe, discomfort life-threating disease. Mostly cases having acute pancreatitis may completely manage after taking right and timely treatment. In cases having severe acute pancreatitis in resulting may bleed in the gland severely tissue damage formation of the cysts and infection. It is an acute pancreatic inflammation presenting clinically with the acute abdomen.[7] Disease severity associated with macroscopic hemorrhage and fat necrosis in and around the pancreas. [7]

In our study in 75% cases with severe acute pancreatitis CRP elevation was found in 75% of the cases. Similarly Alfenjo et al[8] reported out of 157 patients of acute pancreatitis whose serum CRP level were determined. Out of 157, 132 patients had high CRP level less than or equal to 200mg/L obtained at 72 hrs of symptoms onset is valuable to interdict with the big degree of the probability, the presence of necrosis. On other hand Vermeire S et al[9] also found the relationship between the CRP level and pancreatic necrosis and reported that out of 78 patients most of patients had high CRP level cut off of 110mg/L. In the favor of our study Tariq Saeed et al.[10] demonstrated that estimation of the severity state in patients having Acute pancreatitis constitute a significant part of diagnosis and complex treatment so in this diseases early diagnosis and severity can prevent complications and CRP level can

early predict the severity of diseases. Barauskas G et al[11] reported that CRP significantly elevated in early pancreatic necrotic stage, and CRP is the commonest prognostic tool for necrosis of the pancreatitis with high sensitivity and specificity and the NPV is 110 mg/l. Del et al.[12] suggested that the early diagnosis is mandatory for successful treatment and in acute pancreatitis most widely used scoring frameworks are frequently bulky and hard to use in clinical practice on account of their multi factorial nature. Therefore the quantity of uni-factorial prognostic directions has been utilized in the clinical practice routinely, in which CRP is the one of estimation. Sharma S et al[13] reported that 12 were having severe condition and CRP level was between 96-192 mg/L, in 7 cases with mild presentation CRP elevated level was from 24-48 mg/L and only one case had CRP level was normal i.e. below 6 mg/L. Elevated CRP appears to give a notice of serious inflammation in cases whose underlying sickness is generally mild and whose clinical course is obviously benign. Present study in the favor that pancreatic accumulations which create in such cases have their inceptions at an early stage of attack. CRP reaction is comparable in extent to that in patients with all the more clearly extreme pancreatitis.

Similar results are seen in the study conducted by Chun-Chia Chen on Pro-inflammatory cytokines in the initial evaluation of acute pancreatitis prognosis cytokines in acute pancreatitis shows results showed that concentrations of the interleukin-1-β, interleukin-6, interleukin-8, and CRP in 1 to 7 days were significantly greater in cases having severe pancreatitis as compare to those having mild pancreatitis.[14] In our study, 45(75%) patients were males while 15(25%) were females. similar results are seen in the study conducted by Mahmood T et al whose results also shows that males had more pancreatitis.[15] This again could be attributed to alcohol which was the main etiologic agent and which is more common in male population of low socioeconomic status. Shah SSH et al[16] reported that out of 50 cases, 76% were women and 24% were men, with a ratio of 3:1, and age range between 18 to 70 years with the mean of 42 years. This gender difference may due to small sample sizes of both studies. In our study cholilithiasis was the most common in 33.34% of the cases, alcohol consumption was in 16.6% patients while 40% cases were with multiple causes and 10% were unknown, similar results are seen in the study conducted by Mahmood T.[15] On other hand in the favor of findings Barauskas G et al[11] reported thatEtiologic factor for necrotic pancreatitis in 52.9% of patients was gallstones.

CONCLUSION

We concluded that CRP elevations are the good and noninvasive diagnostic tool for pancreas inflammation with good efficacy. More big sample size studies are required to achieve more conformation.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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