ABSTRACT

BACKGROUND

Acute pancreatitis (AP) is the most terrible of all the 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, all render it the most formidable of catastrophies.

Acute pancreatitis is a common emergency disease with widely varying severity. Its wide clinical variations make the diagnosis complex. Mostly, only mild cases and conservative treatment results in rapid recovery. Severe disease constitutes 15–20% of all cases with frequent involvement of regional tissues and remote organ systems as two phase systemic disease. In the first phase extensive pancreatic inflammation and/or necrosis are followed by a systemic inflammatory response syndrome (SIRS) that may lead to multiple organ dysfunction syndrome (MODS) within the first week. About 50% of deaths occur during the first week of the attack, mostly from MODS. Unless the first phase is treated, the second phase ensues after the second week of onset and includes the development of infected pancreatic necrosis or fluid collection with possible progression to overt sepsis, MODS and death. Early identification of acute pancreatitis and especially detection of severe form of the disease is very important.

Currently, the diagnosis of acute pancreatitis is based on measurements of serum amylase and/or lipase activity, which are considered unsatisfactory due to their low level of accuracy. There are a number of well known measurements for evaluating the prognosis of acute pancreatitis, such as the RANSON, GLASCOW, BISAP and Acute Physiology and Chronic Health Evaluation (APACHE II). All of these require measurement of many clinically-based parameters and are very complicated and time consuming. In this study, usefulness of C-reactive protein to assess and monitor the severity of acute pancreatitis was evaluated.

OBJECTIVES

The primary objective is study on C-reactive protein for assessing and monitoring the severity of acute pancreatitis.

METHOD

This is a prospective study, where 75 patients admitted to our hospital with acute pancreatitis, who met with the inclusion and exclusion criteria, were subjected to clinical examination and relevant investigations such as serum amylase, serum lipase, USG abdomen, serial monitoring of C-reactive protein. The results are evaluated and analyzed by comparing with serial monitoring of alpha 1 antitrypsin. White cell

count, erythrocyte sedimentation rate, temperature were used as reference data.

RESULTS

In our study of 75 patients of acute pancreatitis, 39 patients were found to have mild disease and 36 patients were found to have severe acute pancreatitis according to Atlanta criteria 2012. Etiologies of the disease were alcoholic, biliary and idiopathic.

Samples for CRP, Alpha 1 Antitrypsin, WBC, and ESR were collected on day1 of admission and on days 3, 5, 7, 9, 11 after admission. Temperature, ESR, Alpha1Antitrypsin values didn't discriminate acute pancreatitis as mild and severe disease. Although those values were high in severe acute pancreatitis, mean 95% confidence limits of mild and severe attacks were overlapped throughout the study.

On day 1 of admission, difference in WBC count between mild and severe disease, helps to discriminate between the two. As the disease progressed, CRP values reaches maximum in the end of first week, in severe acute pancreatitis and it takes more time to fall towards normal value. Hence CRP helped to differentiated between mild and severe acute pancreatitis better than WBC and Alpha 1 antitrypsin value. High level of CRP (>100mg /l) at first week suggests that patients who have

the disease requires 2 or more weeks to recover and there is risk of developing pancreatic collection.

Increased values of CRP reflect severe local inflammation in mild disease with benign clinical course.

Hence, CRP is a sensitive indicator of continuing inflammation and it may be of better value in selecting the cases who are more prone for developing high risk complications.

CONCLUSION

Temperature, ESR, Alpha1Antitrypsin values didn't discriminate acute pancreatitis as mild or severe disease. Although those values found high in severe acute pancreatitis, mean 95% confidence limits of mild and severe attacks were overlapped throughout the study.

Of the inflammatory markers studied, CRP was able to differentiate acute pancreatitis into mild and severe forms with greatest precision.

KEY WORDS

C - reactive protein, Alpha 1 Antitrypsin, Erythrocyte sedimentation rate, Acute pancreatitis, Severity.