International Journal Dental and Medical Sciences Research
Volume 3, Issue 6, Nov-Dec 2021 pp 64-70 www.ijdmsrjournal.com ISSN: 2582-6018

"Study Of Acute Pancreatitis Along With Clinical And Biochemical Parameters: A Cross Sectional Observational Study Done In MGM Medical College, Kishanganj"

Dr. Sumit Singh, Dr. Abhinav Chaudhary, Dr. Sandeep Bharadwaj

Dr. Sourav Chattopadhyay, Associate Professor, Dept. of General Medicine, M.G.M. Medical College & L.S.K. Hospital, Kishanganj, Bihar

DrSumit Singh Kaushal, Resident, Dept. of General Medicine, M.G.M. Medical College & L.S.K. Hospital, Kishanganj, Bihar

Dr. Abhinav Chaudhary, Resident, Dept. of General Medicine, M.G.M. Medical College & L.S.K Hospital, Kishanganj, Bihar

Dr Shubham Shukla, Resident, Dept. of General Medicine, M.G.M. Medical College & L.S.K Hospital, Kishanganj, Bihar

DR. Sandeep Bharadwaj, Dept. of General Medicine, M.G.M Medical College & L.S.K. Hospital, Kishanganj, Bihar

Dr. Suman Kumar Singh, Resident, Dept. of General Medicine, M.G.M. Medical College & L.S.K. Hospital, Kishanganj, Bihar

Dr. Aniket Sinha,Resident, Dept. of General Medicine, M.G.M. Medical College & L.S.K. Hospital, Kishanganj, Bihar

Submitted: 01-11-2021 Revised: 06-11-2021 Accepted: 09-11-2021

ABSTRACT

Background: In predicted severe acute pancreatitis, many patients develop organ failure and recover without local complications, and mortality is only 14–30%. It has been suggested that half of patients with progressive early organ failure may die, but there are no data to relate death or local complications to duration of early (week 1) organ failure.The early supportive treatments and interventions are beneficial in these cases.

Aims: To assess clinical and biochemical parameters of acute pancreatitis.

Method & Data: A total of 100 patients with predicted severe acute pancreatitis who were admitted in Intensive Care Unit under Department of General Medicine and Medicine Ward at Mata Gujri Memorial Medical College & LSK Hospital, Kishanganj(Bihar) were subjected to cross sectional study.

Results: Most of the participants suffered from acute pancreatitis were males and were of the age group of 30-40 years. Most were having raised leucocyte count, serum lipase and serum bilirubin level. Risk of organ failure in participants presenting early and late were same whereas patients admitted in hospital early were having good clinical outcome.

Conclusion: Clinical and biochemical parameters provide good predictive value of prognosis in acute pancreatitis. Early admitted participants were having good clinical outcome.

I. INTRODUCTION

Acute pancreatitis is an inflammatory condition of the pancreas that is painful and at times deadly. Despite the great advances in critical care medicine over the past 20 years, the mortality rate of acute pancreatitis has remained at about 10%[10].

Recognizing patients with severe acute pancreatitis as soon as possible is critical for achieving optimal outcomes. Management depends largely on severity. Medical treatment of mild acute pancreatitis is relatively straightforward. Treatment of severe acute pancreatitis involves intensive care. Surgical intervention (open or minimally invasive) is indicated in selected cases[9].

The revised Atlanta classification for acute pancreatitis classifies it as:1)Mild pancreatitis (interstitial or edematous): inflammation of parenchyma of pancreas without local or systemic complications. 2) Severe pancreatitis (necrotizing or organ failure): severe pancreatitis causing local and systemic manifestations[11].

Three different phases can be seen during the pathogenesis of acute pancreatitis. The first phase is the acinar cell damage and death. The second phase is local inflammation of the pancreas. The third and final phase is the SIRS. The first two phases take place in the pancreas itself, while in the third phase causes the distant organ damage and extra-pancreatic symptoms[8].

International Journal Dental and Medical Sciences Research
Volume 3, Issue 6, Nov-Dec 2021 pp 64-70 www.ijdmsrjournal.com ISSN: 2582-6018

Systemic inflammatory response syndrome (SIRS) due to acute pancreatitis is because of the acinar cell death which releases activated pancreatic enzymes. This sets up a local inflammatory response which then activates systemic inflammatory response by release of cytokines, tumour necrosis factor, activation of immunocytes and the complement system activation [8].

There is increasing evidence that in the early phase of acute pancreatitis, excessive leukocyte activation and inflammatory cytokine burst are critical for development of early organ failure and increased risk of MODS[12][10].

Acute pancreatitis is a disease with a very varied outcome, ranging from complete resolution to death. Approximately one third to half the deaths in acute pancreatitis occur during the first week, as a result of progressive organ failure (multiple organ dysfunction syndrome (MODS))[10]. Late deaths occurring more than one week after admission to hospital are often associated with local complications, such as infected pancreatic necrosis, and these patients also usually show features of sepsis and MODS[9][8][6].

Organ failure develops often early in the course of acute pancreatitis. About half of the patients who will develop organ failure will have it at admission or within 24 hours after admission [5][4][3].

The most common organ failure in severe acute pancreatitis is respiratory failure. In the presence of a single organ failure, mortality is less than 10%, whereas in multi-organ failurethe mortality rate is 35–50% [1].

Indeed, half of the mortality takes place during the first week of the disease and is related to severe multi-organ failure [10]. The second peak of mortality occurs much later and is related to organ failure due to infectious complications and sepsis [10].

Nevertheless, early identification of patients who develop a severe acute pancreatitis with organ failure would be essential to improve prognosis by earlier intervention with appropriate resuscitation in specialized hospitals.

II. AIMS & OBJECTIVES

The present study was conducted to assess the clinical presentation and biochemical parameters of acute pancreatitis, hence diagnosis and outcome.

III. MATERIALS AND METHODS

This study was a observational hospital based study done among 100 indoor cases of acute pancreatitis admitted under Department of General Medicine of MGM Medical College, Kishanganj in Bihar during July 2020 to December 2020.

Source of Data: All the cases of suspected acute pancreatitis admitted under Department of General Medicine of MGM Medical College, Kishanganj in Bihar, and fulfils the set inclusion criteria. Consent taken from patients to participate in the study, were included in the present study.

Method of data collection : The data was collected from IPD cases fulfilling inclusion criteria using pre-designed, semi-structured, pre-validated proforma, in which history, clinical findings, investigation reports, were incorporated. Cases of acute pancreatitis were evaluated on the basis of history, clinical signs and symptoms, the duration and investigations. Blood and urine investigations, Ultrasonography (USG) Abdomen and/or Computerised Tomography.

IV. RESULTS

We classified the participants according to their age groups, we found that majority of participants belonged to 31 – 40 years of age group (42%) followed by 21-30 years (22%)

Table 1: Distribution of participants according to their age group

Age group (in years)	Number of participants	Percentage
≤ 20	4	4%
21 – 30	22	22%

31 – 40	42	42%
41 – 50	18	18%
51 – 60	10	10%
≥ 61	4	4
Total	100	100 %

Table 2: Gender-wise distribution of study participants

Gender	**Number of participants**	**Percentage**
Males	78	78%
Females	22	22%

Out of 100 study participants, 88% were males and 22% were females (Table 2). Here we observed that male participants outnumbered the female participants.

Table 4: Distribution of participants according to their personal history

Personal History		**Number of participants**	**Percentage**
Alcoholism		54	54%
Smoking		24	24%
Diet	**Mixed**	70	70%
	Vegetarian	30	30%

In this study it was observed that 54% patients had a history of chronic alcoholism, 24% patients had history of smoking. It was found that 70% of study participants were having mixed pattern of diet, while 10 30% study participants were having strict vegetarian pattern of diet (Table 4).

Table 5: Distribution of participants according to their clinical presentations

Clinical features	Number of participants	Percentage
Pain in abdomen	96	96%
Rigidity	92	92%
Fever	62	62%
Nausea / Vomiting	46	46%
Weight loss	40	40%

The clinical presentation of cases of acute pancreatitis observed as per the present study was as given in Table 5. Almost all patients (96%) with pancreatic pseudocyst presented with abdominal pain and lump in abdomen (92%). 62% had complaints of fever, 46% presented with nausea and vomiting. 40% cases complained of weight loss. (Table 5).

Table 6: Distribution of participants according to their general examination positive findings

General examination	Number of participants	Percentage
Febrile	56	56%
Raised RR	40	40%
Pallor	36	36%
Icterus	24	24%
Tenderness	76	76%
Hypertension	32	32%

Among the 100 patients with acute pancreatitis, it was found that 56% were febrile, 40% patients were having raised respiratory rate, 36% were having pallor whereas 24% cases presented with icterus In local

International Journal Dental and Medical Sciences Research
Volume 3, Issue 6, Nov-Dec 2021 pp 64-70 www.ijdmsrjournal.com ISSN: 2582-6018

examination, 76% cases had tenderness.It was found that 32% cases presented with hypertension rest all had blood pressure within normal range. (Table 6).

Table 7: Blood investigations observations

Blood investigations	Parameter	Number of participants	Percentage
Hemoglobin	**<10**	24	24%
	>10	76	76%
Total leucocyte counts	**< 12000**	20	20%
	>12000	80	80%
Random Blood Sugar	**<200**	64	64%
	>200	36	36%
Serum Bilirubin	**< 1.5 mg**	16	16%
	>1.5 mg	84	84%
Serum Lipase	**Low**	22	22%
	Raised	88	88%

In present study,it was found that 24 cases presented with haemoglobin less than 10 mg/dl (anaemia), In 80 cases raised TLC was observed (more than 12000), same cases presented with fever. Rest of the cases were having TLC less than 12000. Random blood sugar estimation was done among the cases of acute pancreatitis, it was found that 36 cases were having random blood sugar more than 200 mg/dl. Serum bilirubin estimation was also done, 84 cases were found with serum bilirubin more than 1.5 mg. Serum lipase values were found to be elevated in majority ofcases (78), which is considered to be suggestive of pancreatitis (Table 7).

V. DISCUSSION

Our study was conducted to study the clinical outcomeof acute pancreatitis (including biochemical parameters) among the cases admitted under the Department of General Medicine of MGM Medical College& LSK Hospital, Kishanganj.

Demography: Out of 100 study participants, 88 were males and 22 were females and so there percentage that 88 and 22 respectively (Table 2).

Age incidence: In our study we observed that most of the participants were from the age group of 30-40 years**.**

Personal history: In this study it was seen that 54% of patients were chronic alcoholic, 24% of patients

were smokers. It was also observed that 70% of study participants were having mixed pattern of diet, while 30% study participants were having strict vegetarian pattern of diet.

Clinical presentation of pancreatic pseudocyst: The clinical presentation of cases of acute pancreatitis studied as per the present study was as given in Table 5. Almost all patients (96%) with pancreatic pseudocyst presented with abdominal pain and lump in abdomen (92%). 62% had complaints of fever, 46% presented with nausea and vomiting, while 40% cases complained of weight loss. Similar study conducted by **George Goodchild1 et al[2]**, reported that out of 17 cases, 15 complained of epigastric pain, 6 cases reported with early satiety, 3 cases reported with weight loss and 2 cases reported with infected pancreatic pseudocyst.

General findings: Out of 100 Patients with acute pancreatitis, it was observed that patients were febrile, 40 patients were having raised respiratory rate, 36 patients were having pallor whereas 24 cases presented with icterus. In local examination, 76 cases had tenderness. It was also found that 32 cases presented with hypertension rest all had blood pressure within normal range.

Investigations findings: In present study, it was found that 12 cases presented with haemoglobin less than 10 mg/dl (anaemia), In 80 cases raised TLC was observed (more than 12000), same cases presented with fever. Rest of the cases were having TLC less than 12000. Random blood sugar estimation was done among the cases of acute pancreatitis, it was found that 36 cases were having BSR more than 200 mg/dl. Serum bilirubin estimation was also done, 84 cases were found with serum bilirubin more than 1.5 mg. Serum lipase values were found to be elevated in majority of cases (78), which is considered to be suggestive of pancreatitis.

Clinical outcome: Out of 100 participants 14 develop organ failure and most of them presented late. So, those presenting early were having better prognosis.

VI. CONCLUSION

The present study shows the most common affected age group, clinical presentation, association of biochemical parameters and diagnosis of acute pancreatitis and hence emphasises the significance of early assessment of severity and intensive care management in acute pancreatitis. Lab markers especially high values of lipase and other markers could be important prognostic markers for predicting morbidity and mortality in acute pancreatitis.

REFERENCES

[1]. S. J. Pandol, A. K. Saluja, C. W. Imrie, and P. A. Banks, “Acute pancreatitis: bench to the bedside,” Gastroenterology, vol. 132, no. 3, pp. 1127–1151, 2007.

[2]. George Goodchild1, Manil Chouhan2, Gavin J Johnson1:Practical guide to the management of acute pancreatitis. Link-https://fg.bmj.com/content/10/3/292

[3]. P. Mentula, M. L. Kylänpää-Bäck, E. Kemppainen et al., “Decreased HLA (human leucocyte antigen)-DR expression on peripheral blood monocytes predicts the development of organ failure in patients with acute pancreatitis,” Clinical Science, vol. 105, no. 4, pp. 409–417, 2003.

[4]. R. Isenmann, B. Rau, and H. G. Beger, “Early severe acute pancreatitis: characteristics of a new subgroup,” Pancreas, vol. 22, no. 3, pp. 274–278, 2001.

[5]. C. D. Johnson, A. N. Kingsnorth, C. W. Imrie et al., “Double blind, randomised, placebo controlled study of a platelet activating factor antagonist, lexipafant, in the treatment and prevention of organ failure in predicted severe acute pancreatitis,” Gut, vol. 48, no. 1, pp. 62–69, 2001

[6]. Buchler MW, Gloor B, Muller CA, et al. Acute necrotizing pancreatitis: treatment strategy according to the status of infection. Ann Surg2000;232:619–26.

[7]. Khaled YS, Malde DJ, Packer J, Fox T, Laftsidis P, Ajala-Agbo T, et al. Laparoscopic versus open cystgastrostomy for pancreatic pseudocysts: a case-matched comparative study. J Hepatobiliary Pancreat Sci [Internet]. 2014 Nov [cited 2017 Nov 16];21(11):818–23. Available from: http://doi.wiley.com/10.1002/jhbp.138

[8]. Beger HG, Bittner R, Block S, et al. Bacterial contamination of pancreatic necrosis. A prospective clinical study. Gastroenterology1986;91:433
8.PubMedWeb of ScienceGoogle Scholar

[9]. United Kingdom guidelines for the management of acute pancreatitis. British Society of Gastroenterology. Gut1998;42 (suppl 2) :S1–13.FREE Full TextGoogle Scholar

[10]. C. J. McKay, G. Gallagher, B. Brooks, C. W. Imrie, and J. N. Baxter, “Increased monocyte cytokine production in association with systemic complications in acute pancreatitis,” British Journal of Surgery, vol. 83, no. 7, pp. 919–923, 1996.

[11]. Thoeni RF (2012). "The revised Atlanta classification of acute pancreatitis: its importance for the radiologist and its effect on treatment". Radiology. 262 (3): 751–64. doi:10.1148/radiol.11110947. PMID 22357880.
[12]. C. de Beaux, A. S. Goldie, J. A. Ross, D. C. Carter, and K. C. H. Fearon, "Serum concentrations of inflammatory mediators related to organ failure in patients with acute pancreatitis," British Journal of Surgery, vol. 83, no. 3, pp. 349–353, 1996.