



## Incidence of Polycythaemia in Pancreatitis Patients

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### ABSTRACT

Acute pancreatitis is the inflammation of the pancreas due to reversible parenchymal injury. It is clinically diagnosed by a characteristic abdominal pain and laboratory findings of elevated levels of serum amylase and serum lipase. In addition to this, due to the movement of the intravascular fluid into the abdominal cavity, polycythaemia has been observed in a few such patients, which can potentially predispose to thromboembolic complications such as deep vein thrombosis (DVT) and pulmonary thromboembolism (PTE), thereby posing a life-threatening risk to the patient. A study was conducted in the Department of General Surgery at Saveetha Medical College and Hospital to assess the incidence of polycythaemia in patients clinically diagnosed with acute pancreatitis by retrospectively analysing the haematology reports of 50 patients. It was found that 5 out of 50 patients (10%) had a finding of polycythaemia in their haematology reports. The identification of polycythaemia in pancreatitis patients will help the clinician with the management protocol to prevent the occurrence of thromboembolic events.



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### INTRODUCTION

Acute pancreatitis is characterised by the inflammation of the pancreas due to reversible parenchymal injury. The most common risk factors precipitating this condition include gallstones and alcoholism. (Lankisch *et al.*, 2002; Venneman *et al.*, 2005)

Clinically, acute pancreatitis is diagnosed by its characteristic abdominal pain, along with the labora-

tory findings of increased serum levels of pancreatic enzymes and direct visualisation of the inflamed pancreas by CT imaging. The abdominal pain is described as a sudden, stabbing pain in the epigastric region, which may radiate to the upper back. There occurs a marked elevation in the levels of serum amylase, followed by an increasing serum lipase level. (Keim *et al.*, 1998)

Polycythaemia refers to a state of elevated packed cell volume and/or haemoglobin concentration. It may either be due to an increase in the number of red blood cells (absolute polycythaemia) or a decrease in plasma volume (relative polycythaemia).

In cases of severe pancreatitis, there may be a loss of intravascular fluid into the abdominal cavity (third-spacing). This decrease in the intravascular fluid volume explains the relative polycythaemia, that may be a finding in some of the cases of acute pancreatitis. (Baron and Morgan, 1999)

Polycythaemia has been implicated in thromboembolic events such as deep vein thrombosis (DVT) and

pulmonary thromboembolism (PTE), which could be potentially life-threatening to the patient. This can be avoided by keenly observing the blood investigations for any increase in the red blood cell count, haemoglobin estimation and packed cell volume. In case of values suggestive of polycythaemia, timely intervention can be done to prevent the development of thromboembolic complications.

## MATERIALS AND METHODS

This study was conducted in the Department of General Surgery at Saveetha Medical College and Hospital. Data was collected retrospectively regarding patients clinically diagnosed with acute pancreatitis and analysed. The values of serum amylase, serum lipase, RBC count, haemoglobin and packed cell volume were noted for 50 cases of acute pancreatitis from their respective haematology reports.

### Inclusion Criteria

Patients clinically diagnosed with acute pancreatitis in Saveetha Medical College and Hospital.

### Exclusion Criteria

Patients clinically diagnosed with acute pancreatitis, having other coexisting haematological disorders.

### Study Duration

Six months

### Sample Size

50 patients

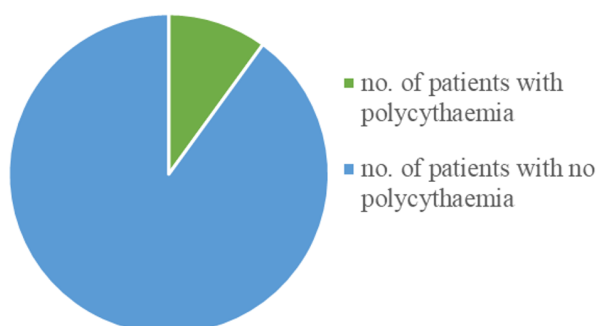
### Type of Sampling

Convenient sampling

### Statistical Analysis

Statistical analysis of the data was done using Microsoft Excel.

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**Figure 1: Pie chart showing the incidence of polycythaemia (10%) in a total of 50 pancreatitis patients**

## RESULTS AND DISCUSSION

Out of the 50 cases of acute pancreatitis that were studied, polycythaemia was observed in 5 patients (10%) [Figure 1].

In this study, the incidence of polycythaemia, occurring patients diagnosed with acute pancreatitis, was found to be 5 out of the 50 cases studied (10%). A previous study of 4 cases was conducted by (Venkat *et al.*, 2016), regarding the observation of relative polycythaemia in pancreatitis patients, caused by a reduction in the plasma volume due to intravascular volume depletion.

## CONCLUSIONS

The study shows that polycythaemia may also be an additional finding to be looked for and taken into account in patients presenting with acute pancreatitis. The identification of polycythaemia should help the clinician with the management protocol to prevent thromboembolic events in such patients.

### Conflict of Interest

The authors declare that they have no conflict of interest for this study.

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