

Acute pancreatitis and pregnancy: Clinical profile, management and maternal-fetal outcomes

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Abstract

Acute pancreatitis during pregnancy, a rare occurrence primarily noted in the third trimester, has been predominantly linked to gallstone lithiasis. This study delves into the multifaceted landscape of this unique clinical entity, aiming to elucidate its manifestation, clinical presentation, therapeutic strategies, and impact on maternal and fetal well-being.

A retrospective investigation encompassing cases from January 2009 to October 2021 scrutinized the clinical trajectories of 31 pregnant or postpartum patients with acute pancreatitis. A comprehensive assessment of their profiles, encompassing demographic data, temporal occurrence, symptomatic manifestations, biochemical markers, and imaging findings, formed the basis of this inquiry.

The study revealed a mean patient age of 29 years, with 62% being multiparous. The temporal distribution showcased pancreatitis events occurring in various trimesters, with vomiting and epigastralgia as the predominant symptoms. Serum lipase levels, indicative of pancreatic enzyme perturbation, were notably elevated. A concomitant rise in C-reactive protein levels was observed in a significant proportion of cases. Hepatic cytolysis and renal insufficiency were concomitant factors.

Diagnosis was facilitated by a combination of clinical symptoms and imaging findings, thus underlining the importance of clinical vigilance. Gallstone etiology emerged as the foremost causative factor, reinforcing the relevance of gallstone lithiasis in this context.

Therapeutic measures centered on symptomatic relief, encompassing fluid resuscitation, pain management, and obstetric monitoring. Maternal and fetal outcomes were characterized by an overall positive trajectory, with a maternal mortality rate of 5.8%. Vaginal deliveries constituted the predominant mode of childbirth, with cesarean sections employed in a minority of cases.

This study illuminates the complex interplay between acute pancreatitis and pregnancy, shedding light on diagnostic challenges, therapeutic considerations, and the dynamic maternal-fetal interface. The findings underscore the significance of timely diagnosis and management in optimizing outcomes for both maternal and fetal entities. The pursuit of comprehensive insights into this niche domain remains integral to enhancing our understanding and refining clinical practices for this distinctive clinical scenario.

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Keywords: Pancreatitis; Pregnancy; Critical care; Fetal Outcomes

1. Introduction

Acute pancreatitis associated with pregnancy is a rare occurrence, predominantly manifesting during the third trimester of gestation. It is primarily attributed to gallstone lithiasis [1]. Occurring as an uncommon and significant pregnancy complication[1].

Due to its nonspecific clinical presentation, APIP can often be mistaken for abdominal pain symptoms associated with conditions like uterine contractions, acute fatty liver of pregnancy, placental abruption, hemolysis elevated liver function and platelet count syndrome (HELLP syndrome), and uterine rupture, contributing to a notable rate of misdiagnosis[2] [3].

2. Material and methods

A retrospective study was conducted between January 2009 and October 2021, encompassing cases of acute pancreatitis occurring during pregnancy or in the postpartum period, and necessitating hospitalization in the Maternal and Child Intensive Care Unit at CHU Hassan II in Fes.

3. Results

A total of 31 cases of acute pancreatitis were identified. The mean age of the patients was 29 years (ranging from 20 to 45 years), with 62% being multiparous. A history of known biliary pathology was present in 28% of cases. Pancreatitis occurred during the first, second, third trimester, and postpartum in 17%, 27%, 39%, and 17% of cases, respectively. Vomiting and epigastralgia were the major signs observed in all patients. All patients remained stable in terms of hemodynamics, respiration, and neurological status. The average serum lipase level was 20.6 times the normal range (2-71 times normal). C-reactive protein (CRP) was positive in 88% of cases, with 33% having levels exceeding 150 mg/L. Hepatic cytolysis was observed in 33% of cases, and functional renal insufficiency was present in 30% of cases. Twelve patients underwent abdominal MRI or CT scan, with the pancreatitis classified as Balthazar stages E, A, C, and B in 58%, 17%, 17%, and 8% of cases, respectively. Gallstone etiology was the most frequent (78% of cases) figure 1-2.

Therapeutic management was symptomatic for all patients: cessation of food intake, fluid resuscitation and rehydration, analgesia (morphine in 28% of cases), antiemetics, preventive heparin therapy, and gastric protection. Sphincterotomy was performed in 3 patients. Obstetric management relied on obstetric ultrasound and fetal heart rate monitoring. Vaginal delivery was achieved in 67% of cases, while cesarean section was performed in 17% of cases. Clinical and biochemical improvement was observed in all patients, with maternal mortality estimated at 5.8%.

4. Discussion

Acute pancreatitis occurs in a young, multiparous woman, typically during the third trimester of pregnancy [4]. Biliary etiology (70%) is the most common, followed by alcohol abuse (10%), hypertriglyceridemia (4%), hyperparathyroidism (1.5%) [1], and Gilbert syndrome [5].

The presence of at least 2 out of 3 criteria confirms the diagnosis of acute pancreatitis: sudden transfixing epigastric pain radiating to the right shoulder or both hypochondria, serum lipase >5 times the upper limit of normal, and concordant imaging findings (edematous hypoechoic pancreatitis, necrotizing hemorrhagic pancreatitis) [6].As a consequence of this phenomenon, it is noteworthy to acknowledge that in an overwhelmingly predominant multitude of instances, the diagnosis of Acute Pancreatitis (AP) can readily be ascertained through the confluence of symptoms encompassing abdominal discomfort, concomitant with an observable surge in levels of pancreatic enzymes[7].

The assessment of severity should consider the presence and persistence of Systemic Inflammatory Response Syndrome (SIRS). The management of gestational acute pancreatitis is primarily symptomatic[8].

Maternal prognosis is generally favorable. Fetal complications are predominantly related to the risk of premature delivery and acute fetal distress. Early diagnosis and appropriate management of this condition contribute to the improvement of maternal-fetal morbidity and mortality.

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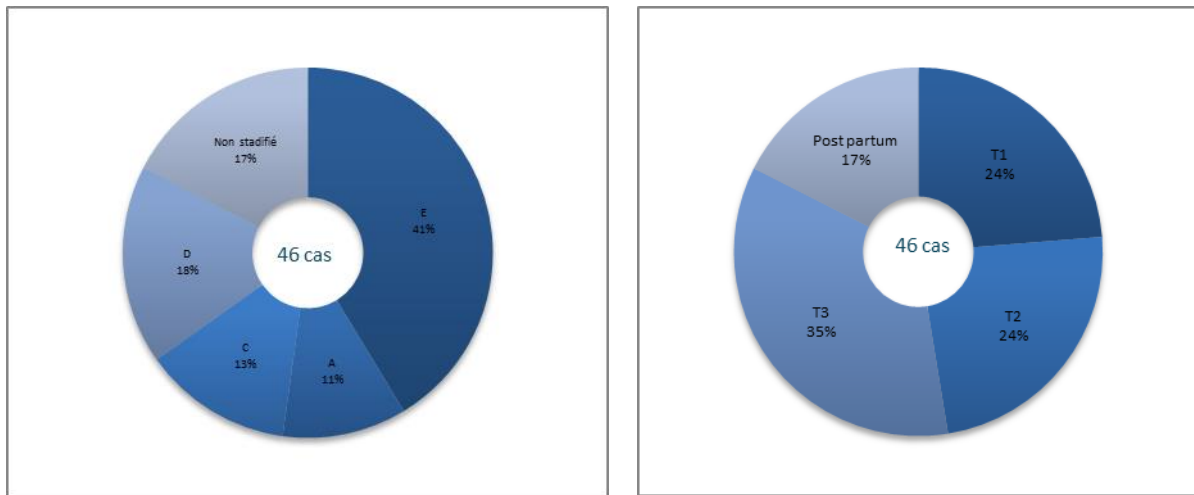


Figure 1 The diagrams illustrate the staging of pancreatitis according to BALTHAZAR and the gestational age

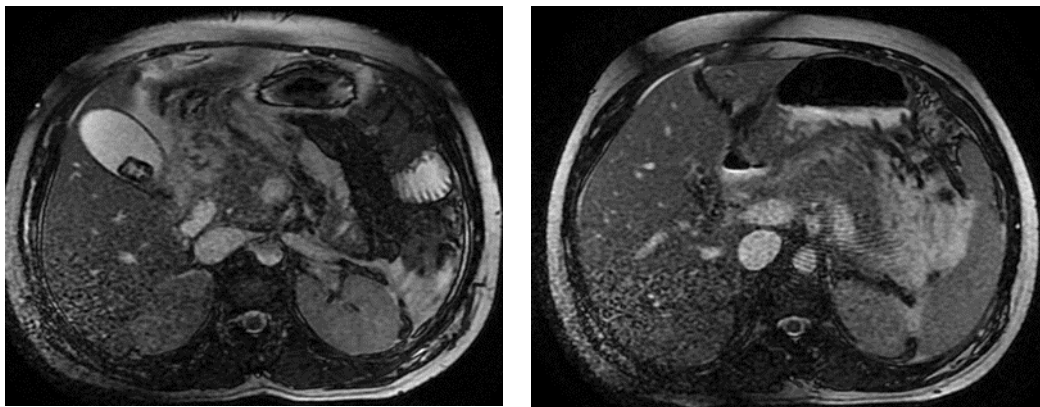


Figure 2 Abdominal MRI of Pancreatitis at Stage E in a 27-Week Gestation, with Necrotic Collections

5. Conclusion

In summary, acute pancreatitis during pregnancy is a rare occurrence, usually seen in the third trimester, with biliary causes being the most common. Diagnosis relies on specific criteria including characteristic symptoms, elevated serum lipase levels, and imaging findings. Severity is assessed based on Systemic Inflammatory Response Syndrome (SIRS), and management is primarily symptomatic.

Fortunately, the maternal prognosis is generally favorable, but fetal complications may include premature delivery and acute fetal distress. Early diagnosis and appropriate management are crucial in reducing maternal and fetal morbidity and mortality. Vaginal delivery is common, with cesarean sections performed in specific cases. Overall, timely recognition and comprehensive care are essential for optimizing outcomes for both the mother and baby, with a relatively low maternal mortality rate of 5.8% indicating the effectiveness of current management strategies.

Compliance with ethical standards

Acknowledgments

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Disclosure of conflict of interest

The authors not have a conflict of interest.

Statement of ethical approval

Our study is purely descriptive, non-interventional, and it has been oppressed by the ethics committee of our institute.

Statement of informed consent

Informed consent was obtained from all parents of the study participants prior to admission to the operating room

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