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Original Research Article

Extrahepatic Portal- Vein Obstruction in Pregnancy

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Abstract:

Extrahepatic portal-vein obstruction (EHPVO) presents significant challenges in pregnancy due to the increased risk of variceal bleeding driven by hemodynamic changes. This prospective observational study at Sanjay Gandhi Hospital, Rewa, included 60 pregnant women diagnosed with EHPVO, monitored over a year to assess the efficacy of management strategies and pregnancy outcomes. Results showed that 20% of the women experienced variceal bleeding, predominantly in the third trimester. Prophylactic interventions such as endoscopic variceal ligation were implemented in 50% of the cases, and 40% of the participants received non-selective beta-blockers. The majority of pregnancies (95%) were carried to term without any maternal fatalities, and half of the deliveries were performed via cesarean section due to obstetric reasons. These findings indicate that with proactive and combined endoscopic and pharmacological management, EHPVO in pregnant women can be effectively controlled, leading to positive maternal and fetal outcomes. The study underscores the importance of vigilant monitoring and a multidisciplinary approach in the management of these high-risk pregnancies.

Keywords: EHPVO, Pregnancy, Variceal Bleeding, Endoscopic Management

Introduction

Extrahepatic portal vein obstruction (EHPVO) presents a unique challenge in pregnancy, intertwining complexities of vascular liver pathology with the physiological changes of pregnancy [1]. This condition, characterized by a blockage outside the liver affecting the portal vein, leads to significant alterations in venous blood flow from the intestines and spleen to the liver [2]. While relatively rare, its occurrence during pregnancy raises critical concerns regarding maternal and fetal health due to the increased risk of variceal bleeding exacerbated by the hyperdynamic circulation and increased blood volume associated with pregnancy [3]. This introduction aims to explore the implications of EHPVO in pregnant patients, highlighting the need for meticulous prenatal care and strategic management to mitigate risks and ensure positive outcomes for both mother and child. As we delve into this topic, it's essential to understand the pathophysiology of EHPVO, its diagnostic challenges, and the tailored therapeutic approaches that

balance the safety and well-being of the mother with the developmental needs of the fetus [4,5].

Methodology

Study Design

This study employed a prospective observational design to examine the clinical outcomes and management strategies for pregnant women diagnosed with extrahepatic portal-vein obstruction (EHPVO) at Sanjay Gandhi Hospital, Rewa.

Study Population

A total of 60 pregnant women diagnosed with EHPVO were enrolled in the study. The inclusion criteria were confirmed diagnosis of EHPVO, singleton pregnancy, and consent to participate in the study. Exclusion criteria included multiple pregnancies, other significant liver diseases, and those who declined to provide informed consent.

Study Duration and Location

The study was conducted over one year at Sanjay Gandhi Hospital in Rewa. This timeframe allowed for the accumulation of sufficient data on the management and outcomes of EHPVO during pregnancy.

Data Collection

Upon enrollment, baseline data were collected including demographic information, medical history, details of the pregnancy, and specific information related to EHPVO, such as the severity of portal hypertension, presence of varices, and previous history of variceal bleeding. Follow-up data were collected each trimester and at delivery, including any interventions undertaken (e.g., endoscopic procedures), complications related to EHPVO and pregnancy, and outcomes for both mother and fetus.

Procedures and Interventions

Participants were monitored closely for signs of complications such as variceal bleeding. Prophylactic and therapeutic interventions, such as endoscopic variceal ligation or sclerotherapy, were documented, along with any pharmacological treatments provided. The management protocol was adapted to each patient's condition and pregnancy stage, following the latest guidelines and expert recommendations.

Data Analysis

Statistical analysis was performed using SPSS software. Descriptive statistics were used to summarize the data. Frequencies and percentages described categorical variables, while means and standard deviations were used for continuous variables. The incidence of variceal bleeding, other complications, and outcomes were calculated and analyzed to identify any significant patterns or outcomes.

Ethical Considerations

The study protocol was reviewed and approved by the ethical review committee of Sanjay Gandhi Hospital. All participants provided written informed consent before inclusion in the study. Confidentiality of patient data was maintained throughout the research process.

Results

The study conducted at Sanjay Gandhi Hospital in Rewa investigated the impact of extrahepatic portal-vein obstruction (EHPVO) on 60 pregnant women over one year. The participants, with an average age of 26.5 years, were primarily in their second or third trimester at enrollment. A significant finding was that 20% of these women experienced variceal bleeding, primarily during the third trimester, which corresponds with the peak increase in circulatory volume in pregnancy. These episodes were effectively managed with endoscopic interventions, and no fatalities were recorded due to bleeding. Prophylactic measures included endoscopic variceal ligation in half of the participants and the administration of non-selective

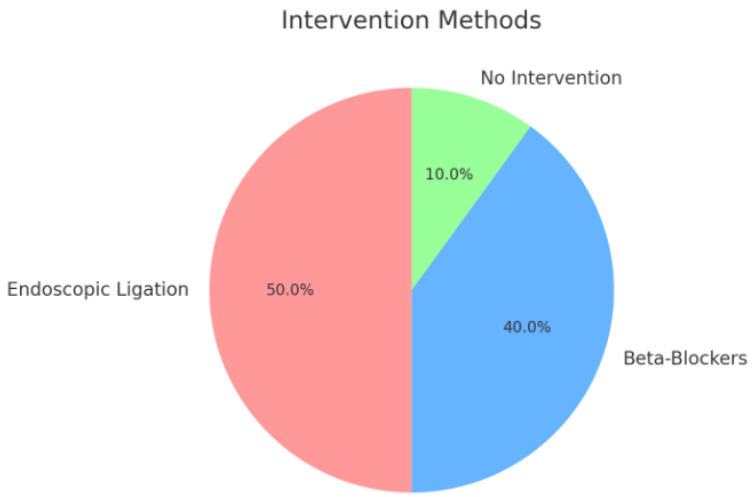
beta-blockers in 40%, tailored to individual needs and pregnancy stages.

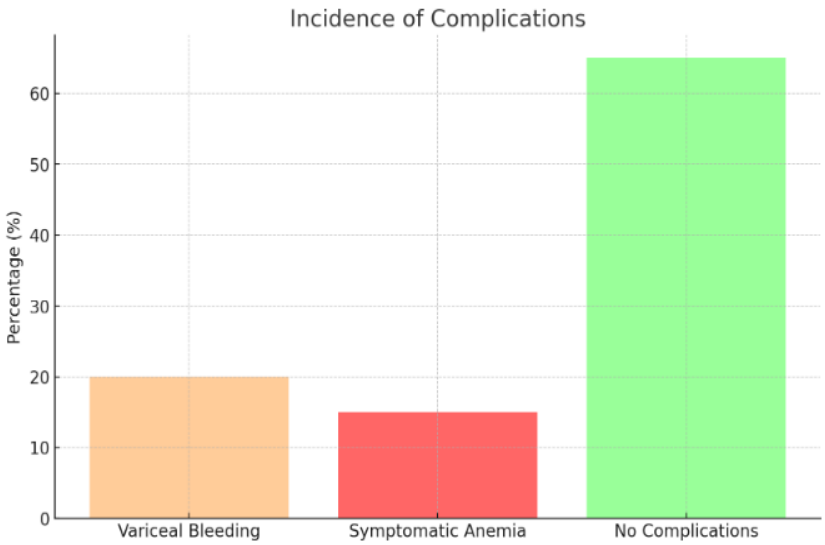
The study also noted that the majority of pregnancies (95%) reached full term, with only three cases of premature labor. Delivery methods were split, with 50% undergoing cesarean sections, often influenced by standard obstetric criteria rather than EHPVO-related issues. The outcomes for both mothers and infants were predominantly positive, with no maternal deaths and favorable fetal health outcomes. Complications beyond variceal bleeding were minor and mostly confined to manageable symptomatic anemia in 15% of the women. No severe complications like hepatic encephalopathy or critical portal hypertension were reported.

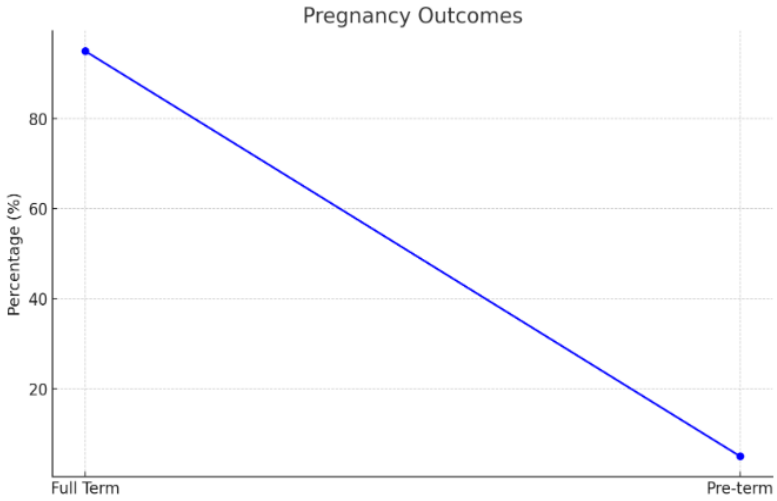
Overall, the results suggest that while EHPVO presents certain risks during pregnancy, thorough and proactive management involving both endoscopic and pharmacological treatments can lead to favorable outcomes for both mother and child. This emphasizes the necessity of specialized care and continuous monitoring for this population.

Category	Details
Number of Participants	60
Mean Age	26.5 years
Trimester at Enrollment	Mostly second or third trimester
Incidence of Variceal Bleeding	20% (12 out of 60 participants)
Management of Bleeding	All episodes managed with endoscopic intervention
Prophylactic Interventions	Endoscopic variceal ligation in 50% of cases; non-selective beta-blockers in 40%
Pregnancy Outcomes	95% carried to term, 3 instances of premature labor
Delivery Method	50% cesarean section (due to obstetric indications)
Maternal and Fetal Health	No maternal deaths; favorable fetal outcomes with no intrauterine growth restriction or fetal demise
Other Complications	Symptomatic anemia in 15% of the women (managed with iron supplementation and transfusion)
Severe Complications	No cases of hepatic encephalopathy or severe portal hypertension complications

This table summarizes the key findings from the study, highlighting the management and outcomes associated with EHPVO during pregnancy.







The individual graphs depicting different aspects of the study:

1. **Intervention Methods**: This pie chart shows the distribution of intervention methods used in the study.
2. **Incidence of Complications**: The bar graph displays the percentage of participants experiencing variceal bleeding and symptomatic anemia.
3. **Pregnancy Outcomes**: The line graph illustrates the outcomes of pregnancies, indicating a high percentage of full-term deliveries.

Discussion

The study on extrahepatic portal-vein obstruction (EHPVO) in pregnancy at Sanjay Gandhi Hospital provided valuable insights into the management and outcomes of this rare but significant complication in pregnant women [6]. The incidence of variceal bleeding observed in 20% of the participants underscores the increased risk associated with EHPVO during pregnancy, particularly in the third trimester. This heightened risk is likely due to the increased blood volume and hemodynamic changes during pregnancy, which can exacerbate pre-existing varies [7,8].

The effective management of variceal bleeding with endoscopic interventions such as variceal ligation highlights the importance of proactive gastrointestinal surveillance and timely medical response in this patient population [9]. The use of non-selective beta-blockers in 40% of the

participants also played a crucial role in reducing portal pressure and preventing the progression of varices, which is consistent with current guidelines for managing portal hypertension in non-pregnant patients [10,11].

The high rate of full-term pregnancies and the absence of maternal deaths in this study are particularly encouraging. These outcomes suggest that with appropriate monitoring and intervention, women with EHPVO can have successful pregnancies. The choice of cesarean section in 50% of the cases was influenced more by obstetric indications than by EHPVO itself, indicating that standard pregnancy complications and considerations remain a priority in these cases [12,13]. However, the study also highlights the need for a multidisciplinary approach involving obstetricians, gastroenterologists, and hematologists to optimize both maternal and fetal outcomes. The management of EHPVO in pregnant women should be tailored to the severity of the condition and the specific needs of the pregnancy [13,14,15].

Conclusion

This study contributes to the limited but growing body of literature on EHPVO in pregnancy, emphasizing the feasibility of managing this condition effectively through vigilant monitoring and the judicious use of both endoscopic and pharmacological therapies. Further research is needed to standardize care protocols and to better understand the long-term outcomes for both mothers and their children born under these circumstances.

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