

Feto-maternal Outcomes in known Cirrhotic Pregnant Women

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ABSTRACT

Objective: To determine the fetal and maternal outcomes among women presenting with diagnosis of liver cirrhosis.

Material and Methods: This descriptive cross-sectional study was carried out at the Asian Hospital Hyderabad. The study duration was two years from November 2019 to October 2021. All the pregnant women having a diagnosis of advanced chronic liver disease, age more than 18 years of either parity or gestational age were included. All the patients were monitored until fetal birth and patients were assessed regarding maternal and fetal complications, including feto-maternal mortality. All the cases were managed by the senior gynecologists with minimum experience of 10 years with the collaboration of gastroenterologists as per indication. Pre-operative, per operative, and post postoperative treatment planes were discussed and done by the collaboration of senior gastroenterologist to decrease the procedure and post procedure complication. All the information was gathered via self-made study proforma. SPSS version 26 was used for the purpose of data analysis.

Results: Total 19 patients were included with an average age of 33.15±5.42 years and average gestational age of 15.63±8.84 weeks. History of endoscopic band ligation was among 12(63.2%) of the cases. Normal vaginal delivery (NVD) was done in 36.8% women, C-section was performed in 26.3% women, missed abortion was medically terminated in 26.3% women, spontaneous complete abortion was in 05.3% and one twin pregnancy with both IUD fetuses was medically terminated. Antepartum hemorrhage (APH) was observed in 21.1% women, PPH was observed in 10.5% cases, PPROM was observed in 10.5% women, and 15.8% were admitted to ICU. Only 4 neonates were alive and out of these 2 were preterm, while 31.6% missed abortion was medically terminated, early neonatal death (ENND) occurred in 10.5% cases, still born were 05.2%, spontaneous complete abortion was 10.5% and 15.8% were IUD.

Conclusion: It was concluded that the risk of adverse fetal and maternal outcomes was much higher in pregnancies affected by liver cirrhosis. Missed abortions found commonest. During advanced liver disease, patients were encouraged to avoid pregnancies by using the appropriate recommended contraceptive methods

Keywords: Liver cirrhosis, maternal, fetal, complications

INTRODUCTION

The liver is an important organ for maintaining human physiology and supporting all of the body's organs. It's appropriate functioning throughout pregnancy is important for the health of both the mother and the foetus.¹ Cirrhosis was once assumed to cause infertility by disrupting the hypothalamic-pituitary axis and disrupting estrogen metabolism, which resulted in amenorrhea and anovulation.^{2,3} Higher conception rates and successful pregnancy outcomes have emerged from advances in the diagnosis and treatment of chronic liver disease (CLD).² The existing literature on maternal and foetal outcomes is restricted to case reports and limited historical series, but it implies that the rate of spontaneous abortion, preterm risk, and neonatal death are all on the rise.^{3,4} With the exception of alkaline phosphatase and alpha-fetoprotein, which rise throughout pregnancy due to foetal/placental production, most liver parameters remain constant during pregnancy and albumin levels tend to drop also during pregnancy.⁵ When compared to the general population, females with cirrhosis seem to be more prone to have pre-pregnancy co-morbidities (such as hypertension, obesity, diabetes and dyslipidemia).^{5,6} Low birth weights, preterm birth, and caesarean birth have all been linked to cirrhosis in previous investigations of pregnancy in cirrhotic women.^{6,7} Moreover, hepatic-related problems such as variceal haemorrhage in 7%–42% of females, ascites in 10%–25% females, and mortality in up to 10% of the females have been documented.^{6,7} Understanding the issues surrounding perinatal outcomes and liver-related complications associated with pregnancy in this population is important to inform guideline development, improve preconception counselling, and improve the patients and infants outcomes, especially despite the substantial population of females having cirrhosis during pregnancy.⁶ There were 50(0.4%) cases of chronic liver disease in pregnant women out of 10,823 births.² In a females with chronic liver illness, the best route of birth is debatable and depends on the presence or lack of significant esophageal varices, the severity of liver dysfunction, and the presence or absence of thrombocytopenia.² Rasheed et al.⁸ found that variceal bleeding during vaginal birth was the leading cause of

death among their participants. The adverse maternal and foetal outcomes in women with hepatic cirrhosis are poorly understood.⁹ This study had been done to evaluate the fetal and maternal outcomes among women presenting with liver cirrhosis

MATERIAL AND METHODS

This descriptive cross-sectional study was conducted at the Asian Hospital Hyderabad after taking approval. Study duration was two years from November 2019 to October 2021. All the pregnant women having a diagnosis of advanced chronic liver disease (liver cirrhosis), aged more than 18 years of either parity or gestational age were included. All the patients who were critical ill who having hepatic encephalopathy and those who were not agreeing to participate in the study were excluded. All the patients were monitored until fetal birth and patients were assessed regarding maternal and fetal complications. All the patients underwent normal vaginal deliveries, caesarean sections and instrumental deliveries as per indication. All the cases were delivered by the senior gynecologists with a minimum experience of 10 years. Pre-operative, per, operative and post operative treatment planes were discussed and done with the collaboration of the senior gastroenterologist and pediatricians to decrease the procedure and post procedure complication. Pre-operative, operative, and post operative management were also was done with the collaboration of the gastroenterologists. All the demographic information, including feto-maternal outcome, was assessed and gathered via self-made study proforma. SPSS version 26 was used for the purpose of data analysis.

RESULTS

A total 19 cirrhotic patients were studied regarding feto-maternal outcome. Patients' average age was 33.15±5.42 years and average gestational age was 15.63±8.84 weeks, average parity was 3.21±2.17 and average gravidity was 5.42±3.1. All the women were housewives. Mostly were illiterate 16(84.2%). As per etiology HCV was 16(84.2%) and HBV was 03(15.8%). History of endoscopic band ligation was among 12(63.2%) of the cases. As

per mode of delivery NVD was done in 07(36.8%) women, C-section was performed in 05(26.3%) women, missed abortion was medically terminated in 05(26.3%) women, spontaneous complete abortion was in 01(05.3%) and one twin pregnancy with both IUD fetuses was medically terminated. Table.1

As per maternal outcome APH was in 04(21.1%), PPH was observed in 02(10.5%), PPROM was observed in 02(10.5%) women and 03(15.8%) women were admitted to ICU. As per fetal outcome, only 4 neonates were alive and out of these 2 were preterm, while 06(31.6%) missed abortions medically terminated, ENND was 02(10.5%), still born 01(05.2%), spontaneous complete abortion was in 02(10.5%) and 03(15.8%) were IUD. Table.2

Table 1. Patient's demographic characteristics n=19

Variables	Statistics
Age (Years)	33.15±5.42 years
Gestational Age (Week)	15.63±8.84 weeks
Parity	3.21±2.17
Gravidity	5.42±3.11
Occupation	Housewives 19(100.0%)
	Illiterate 16(84.2%)
Educational level	Primary 03(15.8%)
	HCV 16(84.2%)
Etiology	HBV 03(15.8%)
History of endoscopic band ligation	Yes 12(63.2%)
	No 07(36.8%)
Mode of delivery	C-section 05(26.3%)
	NVD 07(36.8%)
	Missed abortion 05(26.3%)
	Spontaneous complete abortion 01(05.3%)
	Twin terminated 01(05.3%)

Table 2. Feto-maternal outcome n=151

outcome	Statistics
Maternal outcome	APH 04(21.1%)
	PPH 02(10.5%)
	PPROM 02(10.5%)
	ICU 03(15.8%)
	Preterm 04(21.1%)
Fetal outcome	Alive 02(10.5%)
	Missed abortion medically terminated 06(31.6%)
	Early neonatal death 02(10.5%)
	Preterm
	Alive 03(15.8%)
	Still born 01(05.2%)
	Spontaneous complete abortion 02(10.5%)
	IUD 03(15.8%)

DISCUSSION

The cirrhosis of the liver and pregnancy is the high-risk combination of health. Hepatic encephalopathy, hepatorenal syndrome, ascites and variceal bleeding are all concerns for the mother and foetus when liver decompensation worsens and portal hypertension progresses.^{9,10} In this study 19 cirrhotic patients were examined regarding feto-maternal outcome, their mean age was 33.15±5.42 years and average gestational age was 15.63±8.84 weeks, average parity was 3.21±2.17 and average gravidity was 5.42±3.1. Consistently Tolunay HE et al¹¹ reported that the patient's average age was 33:5±5:5 years, average gravidity was 3:2±1:1 and average parity was 1:7±1, while inconsistently they found a higher average of gestational age as 33:3±6:2 weeks. On the other hand, in the study of Jena P et al² reported that the most of the cases 80.7% were between the age group of 20–30 years and 50% were primigravida women. In the study Jain M et al¹ reported that the preponderance of the cases were between the ages of 21 and 29, which is the peak reproductive age range, most of the cases were from rural areas, the necessity of antenatal registration and visits has not yet been established and cases from lower socioeconomic groups accounted for 85% of the total.

In this study all the of the women were housewives and mostly were illiterate 16(84.2%) belongs to rural areas. In this study as per etiology HCV was 84.2% and HBV was 15.8%, while

63.2% of the cases had history of endoscopic band ligation and as per mode of delivery NVD was done in 36.8% women, C-section was done in 26.3% women, missed abortion medically terminated was in 05(26.3%) women, spontaneous complete abortion was in 01(05.3%) and one twin pregnancy with both IUD fetuses was medically terminated. The study of Hagström H¹² demonstrated that the 76 women with cirrhosis and out of them 32 had etiology of viral hepatitis and C-section was performed in 37 (35.9%) of the cirrhotic patients. On other hand, in the study of Flemming, JA et al⁶ reported that in their study cirrhotic etiology was found as 11.3% HBV, 71% NAFLD, 6.7% HCV, 5.4% ALD and Autoimmune/other was 5.6%. Tolunay HE et al¹¹ reported that the vaginal deliveries were performed in two of the nine cases, while a cesarean section was done in seven. In the study of Westbrook, RH et al³ reported that the patients diagnosed with by varices by endoscopy were more likely to deliver by the C-sections comparing women who did not (13/18 vs 4/15).

In this study, as per maternal outcome APH was in 04(21.1%), PPH was observed in 02(10.5%), PPROM was observed in 02(10.5%) women and 03(15.8%) women were admitted to ICU. In a comparison of this study, Jena P et al² reported that as pregnancy outcome in cirrhotic patients the abortion was in 55.2% cases, PPH 17.2%, puerperal infection was 13.8%, ICU admission was 13.8% and the mortality rate was 6.9%. In the terms of cirrhotic maternal outcome Gao X et al⁹ reported that that caesarean section rate was 73.6%, postpartum haemorrhage was 13.8 percent, 28.9% blood transfusion, ascites, or aggravating ascites 6.2 percent, MODS 7.2 percent, and admission in ICU WAS 24.1 percent followed by 7.2% gums bleeding and 10.3% infection were all more common in patients with liver cirrhosis.

In this study, as per fetal outcome, only 4 neonates were alive and out of these 2 were preterm, while 06(31.6%) missed abortions medically terminated, ENND was 02(10.5%), still born 01(05.2%), spontaneous complete abortion was in 02(10.5%) and 03(15.8%) were IUD. On the other hand, in the study, Jena P et al² reported that live births were 41.4%, still born 6.9%, preterm births 41.7%, low birth weight 41.4%, NICU admission was 50% and perinatal mortality was 23.1%. On other hand, Gao X et al⁹ reported that in aspects of the fetal complications, the preterm birth rate 30.7 percent, newborn asphyxia was 10.2 percent, low birth weight was 13.6 percent, 9.1% neonates were admitted in NICU, and fetal mortality rate was 4.5 percent in the cirrhotic patient's group, while intrauterine foetal death occurred at 31.29 6.02 weeks.⁹ As liver cirrhosis progressed, the rate of spontaneous abortions and irregular uterine bleeding increased.¹³ Pregnant women having cirrhosis had a higher risk of spontaneous abortion, premature delivery, postpartum hemorrhage, and perinatal mortality. According to Mac Dorman et al analysis, the risk of perinatal mortality is 18 percent in mothers with cirrhosis, with early labour being the most common cause of death.¹⁴ Prematurity was also identified as a key concern in our study, which was also reported by Tolunay HE et al¹¹. Because of the small sample size and several limitations and deficiencies in this study, additional large-scale audit-based comprehensive follow-up studies are recommended.

CONCLUSION

It was concluded that the risk of adverse fetal and maternal outcomes was much higher in pregnancies affected by liver cirrhosis. Missed abortions found commonest. further large-scale studies are suggested. The appropriate care of problems in cirrhotic women during pregnancy requires the involvement of a comprehensive medical team that includes general surgeon, gastroenterologists and pediatrician with appropriate backup of ICU and NICU. It would be preferable if advanced liver disease patients be encouraged to avoid pregnancies by using the appropriate recommended contraceptive methods.

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