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Case Report

Pregnancy and Cirrhosis in the University Hospital Yalgado Ouedraogo in Burkina Faso: A Report of Five Cases

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Abstract

The Association cirrhosis and pregnancy is an uncommon event [1,2]. It causes particular risks related to liver disease and its treatments, with maternal and fetal consequences. The largest reported series to date is by Welton's with 13 cases [3]. In Africa, Diarra in Mali reported one case [4]; N'Guessan in Ivory Coast, one case [5]; Dridi in Morocco one case [6]; and Ndubuda in Nigeria three cases [7]. No cases were reported to date in Burkina Faso. The purpose of this work was to evaluate hepatic and obstetric complications in pregnant women with cirrhosis at the University Hospital Yalgado Ouedraogo in Burkina Faso. Five women were studied. The average age was 32 years. Hepatitis B virus caused the cirrhosis in all cases; two patients were known cirrhotic before pregnancy, in the other three cases, cirrhosis was revealed by edema and ascitic decompensation in the course of pregnancy. Two viremic patients were treated with Tenofovir. The main complication was anemia. There were vaginal deliveries in four and the fifth had a fetal death in utero. In the surviving neonates there was one case of birth defect, one case of fetal hypotrophy while two were normal. Child-Pugh score of mothers improved after-delivery. Cirrhosis in Pregnancy requires rigorous multidisciplinary follow-up to minimize maternal and fetal complications.

Keywords: *Cirrhosis; Pregnancy; Consequences; Burkina Faso*

Introduction

The liver diseases observed during pregnancy can be classified into three groups:

- The liver disease of pregnancy that are related specifically to pregnancy,
- Intercurrent acute liver disease that occur incidentally during pregnancy,
- Chronic liver disease (pre-existing pregnancy), which can be revealed by pregnancy or diagnosed incidentally during pregnancy.

Most women with mild chronic liver disease, in particular viral, can carry a pregnancy to term. However, the occurrence of pregnancy in cirrhotic women is a rare event; often because of advanced age during the formation of cirrhosis but also hormonal disorders associated with liver dysfunction causing subfertility [1,2]. The combination of cirrhosis and pregnancy creates special risks associated with liver disease and its treatment with maternal and fetal consequences. According to data from the literature, fetal risk is greater with a higher incidence of spontaneous abortions, premature births, intrauterine growth retardation and fetal deaths [3].

Through the literature review performed, the largest series reported to date is that of Welton with 13 cases [3]. In Africa, Diarra, in Mali reported 1 case [4]; N'Guessan in Ivory Coast, 1 case [5]; Dridi in Morocco 1 case [6]; and Ndubuda Nigeria 3 cases [7].

In Burkina Faso, data on cirrhosis in pregnancy are non-existent. It seemed appropriate to report these five cases seen at the University Hospital Yalgado Ouédraogo of Ouagadougou in Burkina Faso and do a review of the literature on the subject. The objective of this report is to assess liver and obstetric complications in pregnant women with cirrhosis at University Hospital Yalgado Ouédraogo.

Methodology

This is an observational study of clinical presentation of pregnancy and liver cirrhosis over three years from 2014 to 2016. The diagnosis of cirrhosis was made on clinical and laboratory examination. Patient follow-up was multidisciplinary, involving gastroenterologists, pediatrician and an obstetrician. They were tasked to receive patients and/or their children and collect data, each in their area of specialty.

The gynecologist did a complete gynecological examination and obstetric ultrasound which were made at the first consultation. They were followed up by appointments scheduled for the 45th day postpartum, and if necessary the 3rd month postpartum.

The pediatrician reviewed the newborns immediately after birth and at the 3rd month of life. Pregnant mothers with associated disorders such hypertension and obstetric anomalies were excluded.

Cases Report

	Diagnostic	Treatments	Evolution
Obs. # 1	- Asthenia, anemia (Hb = 3.9g / dl) oedemato-ascites -Syndrome -Hepato-splenomegaly -Liver heterogeneous and nodular -EOGD VO grade III with "red signs" positive -HBsAg, undetectable DNA -Prothrombin: 47%; -Hyperbilirubinemia: 42 mmol / l	Evacuative -Ponction of ascites -Antibioprophylaxy -Propanolol -Furosémide -Blood transfusion	-Accouchement vaginally -New-born hypotrophy Neonatal -Souffrance
Obs. # 2	-Cirrhosis known for 2 years -History of OV grade II with "red signs" (eradicated) -Hepato-splenomegaly -Liver dysmorphic in US	-Ligation OV regular ultrasound and clinical biological -Follow	-Vaginal birth -New born healthy
Obs. # 3	-Poor condition - Hematemesis -Anemia (Hb = 5.6g / dl oedemato-ascites -Syndrome -Hépatomégalie farm -US heterogeneous liver -EOGD VO grade III with "red signs" - Thrombopenia: 69000 plq / mm3 -Hypoalbuminemie: 27.6 g / l -Hyperbilirubinemia: 48 mmo/l predominantly conjugated -HBsAg +; DNA = 7672 copies / ml	-Blood transfusion -Furosémide -Propanolol -Ténofovir: 300 mg / d	- Fonte IMO -Persistance ascites -Accouchement vaginally -Hypotrophie newborn, -Syndrome malformation -Death
Obs. # 4	-Hematemesis -Ultrasound: heterogeneous liver, splenomegaly and dysmorphic -EOGD VO grade II, VG -Hyperbilirubinmie to 39.1 mmol / l; -TP: 58%; positive -HBsAg, DNA = 0	-Propanolol -Spironolactone -Repos strict bed -Blood transfusion	fetal death in utero
Obs. # 5	-Altération general condition -oedemato-ascites -Syndrome -Syndrome cholestasis -Hyperthermie -Echo.abd: liver dysmorphic -OGDE OV grade III -Thrombopenia: 46000 plq/mm^3 -Hyperbilirubine: 74.8 mmol / l -Hypoalbuminemia: 23 g/l -HBsAg +; 39188 copies DNA -AFP: 128, 4 IU	-Amoxicillin + Ac. clavulanic -Propanolol -Tenofovir -Ponction ascites -Furosemide	-Accouchement vaginally -Fonte IMO -Assechement ascites -Liver dysmorphic -AFP: 18 IU

Table 1: *Summary of five clinical observations.*

OGDE: Esophago-Gastroduodenal Endoscopy; OV: Esophageal Varices; TP: Prothrombin; IMO: Peripheral Edema; AFP: Alpha-Fetoprotein; GV: Gastric Varices; Hb: Hemoglobin

	Observation 1		Observation 2		Observation 3		Observation 4		Observation 5	
	Pdt G	end G	Pdt G	end G	Pdt G	end G	Pdt G	end G	Pdt G	end G
TP (%)	47	54	87	84	56	71	58	73	65	64
Bilirubin (mmol/l)	42	18.2	9.3	11.7	48	22	39.1	10.4	74.8	42
Albumin (g/l)	31.2	34.7	38	39,02	27.6	37.4	26.4	39.1	23	39
E. H	-	-	-	-	-	-	-	-	-	-
Ascites	+++	+++	-	-	+++	-	-	-	+++	-
Child Pugh	B	B	A	A	B	A	B	A	C	A

Table 2: *Changes in cirrhotic disease during and after pregnancy.*

Pdt G: During Pregnancy; End G: Late Pregnancy; EH: Hepatic Encephalopathy; (+): Small Amount of Ascites; (++): Ascites Average Amount; (+++): Abundant Ascites; (-): No Ascites or No Hepatic Encephalopathy; TP: Prothrombin

	Age (year)	Maternal Complications	Fetal complications and/or newborn
Obs 1	31	-Anemia oedemato-ascites -Syndrome	-Hypotrophie -Growth retardation
Obs 2	33	-Any	-Any
Obs 3	28	-Anemia -Gastrointestinal bleeding -Edema and ascites -Syndrome	-Prematurity -Hypotrophy -Malformations -Death
Obs 4	26	-Anemia -Gastrointestinal bleeding	-Dead fetal in utero
Obs 5	38	-Anemia -Edema and ascites -Syndrome -Infection of ascites	-Anemia newborn

Table 3*: Distribution of maternal and neonatal complications occurred.*

The average age of our patients was 32 years with a range of 26 to 38 years.

Discussions

The combination of cirrhosis and pregnancy probably goes back far in history. But it was in 1923 that the first case was published by Scaglione [8]. In our study, two patients (Table 1) were known cirrhotics diagnosed before the onset of pregnancy. In the other three, cirrhosis was diagnosed during pregnancy.

All the five cirrhotics were Hepatitis B positive, being the leading cause of chronic liver disease in our country. Generally in Africa the hepatitis B virus is the primary aetiology of cirrhosis and liver cancer. The prevalence of hepatitis B is very high on the continent, with a prevalence of 14% in Burkina Faso [9,10].

Pregnancy is generally rare in liver cirrhosis. However, it appears to be more common in viral cirrhosis and alcoholic cirrhosis [11,12]. The mother-child transmission and perinatal hepatitis B virus in Africa explains the occurrence of cirrhosis at a young age and therefore fertility.

The average age of our patients at diagnosis was 32 years with a range of 26 and to years. The young age of our patients is due to the mode of transmission of hepatitis B in our context. Indeed, the main mode of transmission in areas of high endemicity such as Burkina Faso is perinatal transmission. It is either a vertical transmission from mother to child during birth or placental when pregnant women have high viremia or perinatal horizontal transmission between children when they are raised together. Instead the virus is transmitted in more children the chronicity is high and cirrhosis occurs rather early. We now understand the young age of the patients at the time of the formation of cirrhosis [13,14].

There is no data on the subject in Burkina Faso. This was the first study but we have noticed the rarity of such an event (pregnancy in women with cirrhosis) or at least an underreporting of cases. Our study has highlighted the rarity of the association of pregnancy and cirrhosis. Indeed, three years in a high prevalence of HBV countries (14.47%) like ours, with only five cases would suggest a rarity. This is consistent with the published data, in addition there are endocrine disorders, especially specific to alcoholic cirrhosis, justifying subfertility [1,2,12].

Through the literature review performed, the largest series reported to date is that of Welton., et al. with 13 cases [3]. In Africa, Diarra, Mali reported 1 case [4]; N'Guessan in Ivory Coast, 1 case [5]; Dridi in Morocco 1 case [6]; and Ndubuda Nigeria 3 cases [7].

Three of the five patients, had edema and ascites syndrome at diagnosis. Among them, one presented with gastrointestinal bleeding from oesophageal varices (Table 1). Four cases of anemia including two related to severe gastrointestinal bleeding were noted. Hepatic function assessments were disturbed but normalized at the end of pregnancy (Table 2).

There is a significant deterioration of liver function and Child-Pugh score during pregnancy but the exact reason for this deterioration is not very well known [15-17]. The maternal morbidity and mortality are mainly related to the occurrence of gastrointestinal bleeding from ruptured oesophagogastric varices [2,12,18-20]. In our series 2 cases of oesophageal varices were confirmed with 4 cases of anemia likely in connection with this complication. Evolution of cases of oesophageal varices in our series was favorable for mothers but unfavorable for fetuses with a case of fetal death in utero and one case of neonatal death (Table 3).

Abdel Aziz Shaheen and Robert P Myers [1] in a comparative study had concluded that maternal complications (decompensation of ascites, gastrointestinal bleeding from ruptured esophageal varices, hepatic encephalopathy, anemia) including maternal mortality in cirrhotic are more common during the period. For patients with ascites decompensation during pregnancy, maternal and fetal mortality are 6 and 12% respectively; in the subgroup with gastrointestinal bleeding by oesophageal varices, 18% of mothers and 11% of children die.

Some authors [21] believe that pregnancy has little effect on liver function and more surprisingly, when there is a biological activity evidenced by increase in transaminases, they often normalized during pregnancy.

The fetal prognosis and/or neonatal was bad in our different observations with a case of fetal death in utero, a death three months after childbirth (Obs 3), newborn premature with malformation and stunting syndrome), a case of stunted growth (obs 1). Perinatal deaths were both born to mothers who experienced an variceal bleeding followed by severe anemia during pregnancy. These results corroborate those in the literature by which gastrointestinal bleeding complicate portal hypertension during pregnancy is associated with a high risk of perinatal death [1,12]. Such bleeding can occur at any time during pregnancy. But the maximum bleeding occurs into the second quarter, due to the maximum blood volume expansion, and during childbirth because of expulsion efforts that predispose to rupture of varicose veins [3,6]. In our series, gastrointestinal bleeding had occurred in the 16th week of gestation (Obs 3) and the 31st week (obs 4).

The different series published reported a perinatal mortality between 8 and 21%. This mortality is related to the severity of maternal conditions (hematemesis, hepatic and renal failure, toxemia, severe anemia) [1].

The supplementation vitamin and mineral routine should begin early in pregnancy and sodium restriction is needed early in pregnancy to prevent volume overload [22,23].

In case of risk of preterm delivery, the patient should be treated primarily with beta-2-agonists [22].

The specific long-term treatment of the cause of cirrhosis should not be interrupted during pregnancy. All patients were carriers of a viral hepatitis B; two of them had a viral replication and were put under antiviral treatment with TENOFOVIR orally; in the case of 3 and 5 with comments at the end, the birth of a newborn with several malformations (Obs. 3).

It is permissible that the pregnancy be continued until the end or until fetal lung maturity is documented, if the mother is well compensated cirrhosis [24]. Pregnancy must be stopped at any time if a deterioration of the maternal condition occurs, threatening mother [24]. The terms of the vaginal delivery remains controversial. The induction of labor offers the advantage of providing delivery during business hours with the presence of all the staff (hepatologist, obstetrician, pediatrician, anesthetist) and preparation of the necessary technical equipment. However it can extend the working time and increase the risk of cesarean section.

The systematic use of instrumental delivery to avoid maternal thrust forces is largely suggested by the authors. However, no studies have shown the superiority of this attitude systematic elective indications policy. The vaginal delivery should be preferred in all cases of portal hypertension at the cost of a number of precautions that are also related. Caesarean section is reserved for obstetric indications; cirrhotic women poorly tolerate laparotomy [7].

In our series, all our five patients had delivered vaginally without major complications and the puerperium was simple.

Conclusion

In conclusion, pregnancy associated with cirrhosis is a high-risk pregnancy that requires a thorough knowledge of the pathophysiology of both the pregnancy and cirrhosis, and coordination between the obstetrician, the hepatologist, pediatrician and anesthetist.

The maternal risk is directly related to portal hypertension and in particular to the presence of esophageal varices that should be sought systematically in early pregnancy by performing an upper endoscopy. The search for intrauterine growth retardation, fetal distress and preventing premature birth are measures to be taken. There needs to be adequate care and careful monitoring both before and during pregnancy and at the time of delivery, so that any woman in labor can carry her pregnancy to term with less risk of complications.

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