

PROSPECTIVE STUDY OF 146 CASES OF ACUTE VIRAL HEPATITIS IN PREGNANCY WITH REVIEW OF LITERATURE

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SUMMARY

A comprehensive prospective study of 146 pregnant women with hepatitis covering the clinical, biochemical, serological, aspects was carried out at a major infectious diseases hospital over a six month period. It was found that multiparous women under the age of 30 years, in their third trimester were commonly affected. Fetal wastage in the form of still births, IUFD and neonatal deaths was found to be more common than abortions. It is postulated that the fetal immunological system developing in the second half of pregnancy, may in some way act to produce disastrous results. A high prematurity rate of over 85% was noted. The sole case of cesarean section for CPD with threatened rupture, was done in maternal interests. High stillbirth rate is noted. The moribund condition of the mother leads to the hesitancy on the part of the obstetrician to act in the fetal interests. However, the depreciation of the fetus in utero due to the possible placental insufficiency cannot be ruled out. Maternal mortality was to the tune of 14.4%. Whereas 11% of the deaths were associated with delivery, only 3.4% deaths occurred in the undelivered patients. Multiparity and associated delivery signified grave prognosis.

Introduction

Divergent opinion regarding maternal and fetal outcome of pregnancies complicated by acute viral hepatitis, exist today. Increased maternal mortality has been reported by many groups^{5,6,8}. However those in the West have concluded that, viral hepatitis was not more severe

in pregnant women in general^{3,4,10}. In several instances poor maternal nutrition appears to have contributed significantly to the increased severity of infection and higher death rates. Less controversy exists about the effects of maternal hepatitis on the fetus. Most authors^{5,6,8} have reported an increased incidence of abortions, stillbirths and premature deliveries. Nevertheless, others have not observed an increase in these complications^{1,7,11}.

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A number of drawbacks are inherent in many ways of the above reports. Most are retrospective analysis of hospital admissions usually to an obstetrical service. Such reports may have been unintentionally biased by inclusion of severely ill patients, whose disorders are more easily recognised. The milder variety are treated on O.P.D. basis, unrecognised and hence not included in the study. Our study was designed to avoid as many drawbacks as possible. The present analysis is prospective.

Materials and Methods

The study was carried out from August 1985 to January, 1986 at a major hospital for infectious diseases in Bombay where all the cases of infectious diseases are admitted. On admission of pregnant women with hepatitis, a detailed history was obtained and a thorough clinical examination including the obstetric examination was carried out. Blood was collected for biochemical and serological examination. The patient was observed for deterioration to percoma or coma. A repeat examination of LFT was carried out one week later and if these were in

decreasing levels when compared with previous reports, the patient was discharged. If, however, the patient developed percoma, coma or had rising titres of SGPT or serum bilirubin levels, she was observed more closely. The patients admitted with coma or percoma or those who developed it during their hospital stay were put on anti-coma line of treatment. The fetal heart sounds were monitored. If however, fetal distress developed, a conservative line of treatment was adopted and LSCS performed in maternal interests only. Following delivery, close watch was kept on the mother for PPH. The baby was examined by the pediatricians and their maturity judged clinically. Babies were nursed in separate nursery and breast feeding was advocated routinely. Suppression of breast milk when required was carried out with breast binders and diuretics.

Observations and Results :

Table No. I shows that of the 146 pregnant women with hepatitis the outcome was known in 66 patients. There were 2 cases of twins and hence the total number adding on to 68.

TABLE - I
FETAL OUTCOME IN 66 PATIENTS

Outcome	No. of Cases	Percentage
(1) Abortions	2	3.0
(2) Stillbirths	11	16.7
(3) IUFD	6	9.1
(4) Premature Deliveries		
(a) Live	22	
(b) Neonatal Deaths	18	60.6
(5) Fund		
(a) Live	8	
(b) Neonatal Death	1	13.6
Total	68	100%

TABLE - II
LABOUR RECORD OF 58 DELIVERIES

Mode of Delivery	No. of cases	Percentage
(1) Single Vertex	39	67.2
(2) Stillbirths	11	19.0
(3) Single viable breech	5	8.6
(4) LSCS	1	1.7
(5) Twins Both vertex	2	3.4

Table No. II highlights low LSCS rate and a high breech, delivery rate. Stillbirths of 19% is also high.

TABLE - III
COMPLICATIONS

Complications	No. of cases
(1) Pre-coma	20
(2) DIC	14
(3) Coma	12
(4) Puerperal Sepsis	2
(5) PPH	17
(6) Wound Infection	5

Table No. III, depicting complications show that percoma leading to coma and DIC were the most common complications. PPH also occurred in a significant number of patients.

TABLE - IV
MATERNAL OUTCOME OF 146 CASES

Outcome	No. of Cases	Percentage
(1) Dead with delivery	16	11.0
(2) Dead without delivery	5	3.4
(3) Discharge without delivery or abortion	80	54.8
(4) Discharge with delivery or abortion	44	30.1
(5) Transfers	1	0.7

Table No. IV shows that over 54% of the admitted cases were discharged without delivery or abortion and 30% were discharged with delivery. Thus over 84% of cases are discharged.

This table shows the two serological investigations viz. S. bilirubin and SGPT and its relation with maternal and fetal deaths. It is seen that, as the enzyme levels and bilirubin levels increase, worse prognosis is encountered.

It is seen in this table that, as serum bilirubin and SGPT levels rise in the cord blood, a poor outcome is noted.

TABLE - V
SERUM INVESTIGATIONS OF MOTHER WITH
RELATION TO FETAL AND MATERNAL MORTALITY

Parameter	Number of cases	Maternal Death	Fetal Death
1. S. Bilirubin			
0 - 5 mg%	17	1 5.9%	6 35.3%
5 - 10 mg%	31	9 29.0%	18 58.1%
10 - 15 mg%	15	9 60.0%	12 80.0%
15 - 20 mg%	2	1 50.0%	1 50.0%
20 + mg%	1	1 100.0%	1 100.0%
2. SGPT			
0 - 300	48	10 20.8%	24 50.0%
300 - 1000	14	7 50.0%	10 71.4%
1000 +	4	4 100.0%	4 100.0%

TABLE - VI
SERUM INVESTIGATIONS OF THE AM FLUID/CORD BLOOD WITH FETAL OUTCOME

Parameter	No. of Cases	Fetal Death	%
1. S. Bilirubin			
0 - 5	47	21	44.7%
5 - 10	10	6	60.0%
10 +	9	9	100.0%
2. SGPT			
0 - 50	42	17	40.5%
50 - 100	16	13	81.3%
100 - +	8	6	75.0%

Table No.VII depicts the fact that, the pregnant women are over 2.5 times the risk of a grave outcome as compared to their non-pregnant counterparts.

Discussion

Our study of 146 cases of pregnant women with infective hepatitis, has re-

over 55% presenting in 3rd trimester and 30% presenting in 2nd trimester and 30% presenting in 2nd trimester. This may be due to the increased nutritional demand put on the body system by the developing fetus in 3rd trimester.

Of the 146 patients, fetal outcome

TABLE - VII
NON-PREGNANT AND PREGNANT HEPATITIS WOMEN

	Non-Pregnant		Pregnant	
	No.	%	No.	%
Total	236		146	
Dead	13	(5.5%)	21	(14.4%)
Discharged	218	(92.37%)	124	(8.95%)
Transferred	5	(2.12%)	1	(0.67%)

vealed that the outcome of pregnancy in the Indian women differ in almost all respects from their western counter-parts. Whereas the western study^{10,11} have only 30% of cases under the age of 25 years, our study that over 55% of the cases were under 25 years. The multiparous women, constituting about 70% of the cases, as in the study of Mandal and Roy Choudhary (1982), confirms the marginal nutritional status of these women, predisposing them for infection. However, as with the study Western Women^{7,10,11}, our study and that of Malkani and Grewal (1957) showed

was known in 66 of them 58 delivered viable babies, 2 aborted, and 6 had IUFD. The rest were discharged in convalescent phase and asked to follow up at a general hospital. Fetal loss by way of abortion, was seen in only of the 15 percent women (13%) in first half of pregnancy, while stillbirths, neonated deaths and IUFD occurred in 36 of the 60 cases (60%). In number of studies done,^{3,4,7,10,11} the perinatal mortality rate has varied from 6.6% to 58.5%. In our study, we found fetal loss by way of abortions to be the same as in the general population. However, fetal loss by

way of stillbirths and neonatal deaths is significantly more than abortions. In a study of placentae of hepatitis affected women by Prabhu and Pendharkar (1984), it was shown that findings suggestive of immunological damage viz. fibrinoid necrosis, villous oedema and thickening of the basement membrane occur, in a significant proportion of women. We postulate that the fetal immunological system developing in the second half of pregnancy may react to the virus or virus particle, to bring about placental damage, thereby producing disastrous results. In our study, 51 of 58 patients (88.3%) delivered, were found to be premature by clinical estimations. These findings corroborate with the findings of others^{5,6,9}. We postulate the cause to be immunological damage to the placenta by the fetal polyclonal antibodies. As the fetal antibodies are produced only after 20 weeks, the triggering of labour occurs following insufficiency of the placenta caused by the damage.

As most of the deliveries were preterm, labour was uneventful. The sole case of caesarean section was done for previous LSCS with CPD with threatened rupture. The patient worsened following operation and expired. Precoma, coma and DIC the sequelae of acute hepatic failure were the most common complications accounting for the high mortality.

Though majority (84.9%) of the women were admitted and discharged either without delivery or abortion (54.8%) or with delivery (30.1%), a significant number met with an unfortunate end, 11% died during delivery and 3.4% died undelivered or aborted. The overall mortality in 146 cases was found to be 14.4% being three times more in women who delivered or aborted than those who did not. Also

multiparous women had increased mortality rate (18%) as compared to primiparous women. The maternal mortality in studies from Asian countries has been reported from 10-48%. In contrast the western authors^{3,7,10,11} have reported maternal mortality of only 1.0-1.4%. This difference may be due to the difference in nutritional states.

The incidence of maternal and fetal mortality increased steadily when the serum bilirubin levels increased. Thus, when the serum bilirubin levels were above 15 mg% the maternal and fetal mortality was 100% whereas below 5 mg% the maternal and fetal mortality were between 5.9% and 35.3%. Same is true about SGPT levels. When these are above 1000 KU, maternal and fetal mortality is about 100% and when less than 300 KU these are 20.8% and 50% respectively. The investigations carried out on the cord blood revealed that, as the level of cord blood bilirubin increases, fetal mortality increases. This was also the case with cord blood SGPT levels.

Conclusion

The comprehensive study, covering various aspects of hepatitis in pregnant women, has revealed many significant findings. Self limiting, innocuous viral infections may be the reason for the many of the yet unknown premature labours. Fetal immunological system has been underestimated which can play havoc if stimulated.

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