

A Study of Maternal Mortality Due to Viral Hepatitis

Trivedi S S, Goyal Uma, Gupta Usha

Department of Obstetrics and Gynecology, Lady Hardinge Medical College and Smt. S. K. Hospital, New Delhi.

OBJECTIVE - To study and analyse the maternal deaths occurring due to viral hepatitis. **METHOD** - A retrospective study of maternal deaths due to viral hepatitis was done to find out the causes and factors responsible for them deaths. **RESULTS** - Viral hepatitis was found to be the leading cause of maternal mortality accounting for 29.43% of maternal deaths. Hepatic encephalopathy was present in all these cases; coagulation failure was present in 14.28%, gastro-intestinal bleeding in 12.69% and hepato-renal failure in 11.11%. Anemia was present in 71.4% and severe anemia in 12.69%. Majority of cases reported to the hospital in a moribund state, 65.07% dying within 72 hours of admission. **CONCLUSION** - Fulminant hepatic failure due to hepatitis was found to be the leading cause of maternal mortality. Severity of disease and poor response to treatment in hepatic failure were the main factors responsible for maternal mortality in these cases.

Key words : parity and antenatal care, maternal death

Introduction

Maternal mortality continues to be very high in developing countries. The major causes being hemorrhage, sepsis, pregnancy induced hypertension with its complications and anemia. In our hospital, however, hepatitis was found to be the leading cause of maternal mortality in the past few years. Hence this study was undertaken to analyse the maternal deaths occurring due to viral hepatitis in order to determine the causes and factors responsible for these deaths and to find out implementable interventions, if any, to reduce maternal mortality due to hepatitis.

Material and Methods

A retrospective study of maternal mortality due to viral hepatitis from 1st Jan 1999 to 31st December 2001 was carried out. Causes of maternal mortality were analyzed and maternal deaths due to viral hepatitis were scrutinized in detail.

Results

There were 42,594 live births and 214 maternal deaths during the 3 year study period giving the maternal mortality of 502 deaths per 100,000 live births. Viral hepatitis was the cause of death in 63 cases, accounting for 29.43% of total maternal mortality. The other major causes of maternal mortality were sepsis (20.09%), severe anemia (10.74%), pregnancy induced hypertension / eclampsia (7.94%) and hemorrhage (7.94%) (Table I).

Paper received on 1/5/03 ; accepted on 21/9/03

Correspondence :

Dr. S S Trivedi

Bungalow No. 22, Lady hardinge Medical College
New Delhi - 110 001.

The maximum number of women dying because of viral hepatitis during pregnancy, belonged to the 20-25 years age group. Majority of women (38%) were primigravid and 88% were unbooked but all were immunized against tetanus during pregnancy.

Condition at the time of admission and duration of hospital stay :

Most of the patients were admitted in poor general condition. Four (6.34%) had jaundice for more than 15 days, 50 (79.36%) had it for 5-10 days, 6 (9.52%) for 3 days and 3 (4.76%) had noticed jaundice only one day earlier. Fortyone (65%) women already had symptoms suggestive of encephalopathy at the time of admission.

Duration of stay in the hospital varied from 5 hours to 16 days 19 hours. Fortyone women (65.07%) died within 72 hours of hospital admission and out of these 13 (20.6%) died within 24 hours.

Severity of Jaundice

A majority of women viz. 32 (50-79%) had serum bilirubin between 10 and 15 mg% while 6 (9.52%) had it between 5-10mg. %, 15 (23%) between 15 and 20 mg % and 10 (15%) had more than 20mg%. Maximum bilirubin was 31.5mg %. Serum aminotransferase levels were raised but were less than 500 IU/L in 14 (22.22%), between 500 to 1000 IU/L in 24(38.09%), between 1000 to 2000 IU/L in 11 (17.46%) and more than 2000 IU/L in 3 (4.76%) cases. In case records 11 the reports were not available.

Duration of Pregnancy and Pregnancy Outcome

Table II depicts the duration of pregnancy and pregnancy outcome in these 63 cases. There were two twins and one triplet pregnancy. In majority of the

women viz. 57 (14.7%) the duration of pregnancy was between 28 and 36 weeks, 5 (7.93%) women were post-partum and one (1.58%) was post-abortum. Twenty seven women (42.85%) died undelivered, 28 (41.26%) had stillbirths and 9 (14.28%) had live births.

Cause of Death

Majority of the cases had more than one complication of hepatitis leading to mortality. Hepatic encephalopathy developed in 85.7% of cases, 9 (14.28%) had coagulation failure, 8 (12.69%) had gastro-intestinal bleeding, and 7 (11.11%) had hepato-renal failure. Anemia was present in 45 (71.42%) women and it was severe in 8 (12.69%) cases.

Discussion

The maternal mortality of 502 per 100,000 live birth observed in our study is higher than the national average of 407¹ and could be due to the fact that large number of complicated cases come to our institution.

Hepatic failure due to viral hepatitis was the leading cause of maternal mortality accounting for 29.43% of all maternal deaths. The effective treatment of other causes of maternal mortality like hemorrhage, sepsis and anemia in hospital setting may be responsible for the relative increase in maternal mortality due to viral hepatitis, which responds poorly to the medical treatment once hepatic failure occurs.

A high maternal mortality has been reported in cases of viral hepatitis in pregnant women as compared to non-pregnant women². In developed countries, however, the course of the disease is said to be unaltered by pregnancy except in cases with hepatitis E where it is more serious especially when acquired late³. Acute viral hepatitis in an adult in a high prevalence area, like India, is more likely to be due to hepatitis type B or E rather than A because of the

widespread exposure to hepatitis A in childhood and subsequent immunity⁴. Although facilities for all viral markers are not available in our institution, only three out of 50 cases tested for Hepatitis B surface antigen were found to be positive for Hepatitis B.

One of the factors for high mortality in viral hepatitis during pregnancy in developing countries may be the poor nutritional status as was evident by high prevalence of anemia in our cases. Other factors could be delay in seeking medical treatment and reporting to the hospital in late stages of the disease as 65% of women had symptoms suggestive of encephalopathy at the time of admission.

In maximum number of cases (57.14%) duration of pregnancy was between 28 and 37 weeks. Mirghani et al² reported that more than 80% of the deaths due to viral hepatitis in pregnancy occurred in the third trimester.

Hepatic encephalopathy was present in 85.7%, a serious complication that carries a high mortality rate of about 80%. Coagulation failure and hepato-renal failure, despite intensive treatment, were other major contributory factors found to be present in the maternal deaths due to viral hepatitis. Falciparum malacia causes jaundice, but is treatable.

Poor nutrition, delay in the diagnosis and in referral, fulminant nature of the disease and poor response to medical treatment once hepatic failure occurs, were the factors responsible for high mortality. Early diagnosis, immediate hospitalization and intensive treatment, and importantly prevention by spread of awareness regarding hygiene, good nutrition and proper water supply, vaccination against hepatitis and the seeking of medical help at the earliest, would help in reduction of maternal mortality due to this disease.

Table I: Causes of Maternal Mortality

Causes	No. of Cases	Percentage
Viral hepatitis	63	29.43
Sepsis	43	20.09
Anemia	23	10.74
PIH / Eclampsia	17	7.94
Hemorrhage	17	7.94
Embolism	10	4.67
Heart disease	6	2.80
Ruptured uterus	5	2.33
Others	30	14.01

Table II : Duration of Pregnancy and Pregnancy Outcome

Gestational Age in weeks	No. of cases	No. of Cases who died Undelivered	No. of cases delivered	
			Stillbirth	Livebirth
>16-24	6	5	2*	0
>24-28	12	5	6	1
>28-32	17	8	6	3
>32-36	19	8	8	3
>36	19	1	2*	1
Post Partum	5	-	4	1
Post Abortal	1	-	-	-
Total	63	27	28	9

* Twins

References

1. Annual Report 2000-2001, Ministry of Health and Family Welfare. Government of India. 2001: 178.
2. Mirghani O.A., Saeed O.K., Basama F.M. Viral hepatitis in pregnancy. *East Afr Med J* 1992; 69: 445-9.
3. Cunningham FG, Gant NF, Leveno KJ et al. eds. *Williams Obstetrics, 21ed.* New York : McGraw Hill, 2001 : 1290-2.
4. Michael de Sweit. *Medical Disorders in Obstetric Practice*, London Blackwell Science Limited. 1995: 333-77.