

VIRAL HEPATITIS IN PREGNANCY

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Abstract

A study of viral hepatitis in pregnancy, extended over a period of 18 odd years is presented. After the introductory remarks, denoting controvertial features of this association, three different series of cases are presented, two from Pakistani and one from a Nigerian hospital. Most of the cases were studied prospectively with some retrospective analyses.

Method of study is described, followed by the results obtained. The latter are tabulated into various groups to facilitate discussion.

It was noticed that viral hepatitis is more frequent, in association with pregnancy and has high morbidity and mortality, which rises with advancing pregnancy. Increased foetal loss was also observed. But no significant relationship could be determined with some other factors which are briefly discussed and which are known to occasionally influence such cases.

It is concluded that enhanced detrimental effects of this illness in pregnant women, atleast in the yet developing countries, demands its more vigilant prevention and control to reduce the high maternal death rates associated with it.

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Introduction

Viral hepatitis is the most frequent cause of jaundice in pregnancy. Expectant mothers are more prone to this disorder, at least in the developing countries. This may perhaps be due to malnutrition or other factors. The disease is usually seen in the third trimester, and its severity increases with advancing pregnancy. Both the maternal as well as the foetal mortality show significant increase.

This study was undertaken to determine the effects of viral hepatitis in the mother and the foetus.

Patients and Method

The clinical material was collected from three different hospitals i.e. Military and Holy Family Hospitals of Rawalpindi, Pakistan and from the Armed Forces Hospital, Yaba Lagos, Nigeria.

At the Military Hospital Rawalpindi, 6 cases of viral hepatitis were seen over a period of two years between 1960 and 1962.

While out of 2340 deliveries at the Armed Forces Hospital Lagos, Nigeria, from 1963 to 1968, 30 patients were found to have viral hepatitis.

Both these groups were studied prospectively. The diagnosis was based on clinical and biochemical findings and was further confirmed by needle biopsy of the liver. In the second group, livers of some aborted foetii also, were examined histologically. Adequate recording, follow up and statistical comparison was possible in both these groups. All entitled patients had easy access to these military hospitals. A retrospective analysis was carried out on the data of 27 cases of pregnancy with acute viral hepatitis admitted at the Holy Family Hospital Rawalpindi from 1971-1976. In this group also the diagnosis was based on similar lines, except that needle biopsies of liver were not carried out. These cases included those from obstetric-gynaec department as well as from female medical wards. Thus cases in all stages of pregnancy were studied and they belonged of a wide variety of social strata.

Cases of other types of jaundice like the recurrent cholestatic jaundice of pregnancy, drug hepatitis, obstructive jaundice were excluded from the study.

Results

1. Incidence:

It was definitely higher in pregnant cases as compared to controls. This effect was most obvious in Lagos group where 30 cases were encountered amongst 2340 deliveries i.e. (1.2%) while only 16 were found in a similar number of non-pregnant females, i.e. 0.7%.

2. Age:

The effect of age was best studied in the Holy Family Hospital, Rawalpindi group. Here the maximum frequency observed was in the third decade, with a range of 18-40 years.

3. Parity:

No significant relationship emerged between the parity and frequency of viral hepatitis, or with its severity.

4. Duration of Pregnancy:

Table 1 shows highest frequency in the 3rd trimester of pregnancy, in all the 3 groups, ranging from 63 to 67%.

5. Severity:

There was a high percentage of severe cases in our series. Thirty out of a total of 63 cases, i.e. about 50%, with 20 of them (i.e. 66% of severe cases), in late pregnancy. These latter had a much higher frequency of coma following hepatic necrosis, which occurred in 16 out of 19 fatal cases in this series (84.2%).

6. Maternal Mortality:

Nineteen out of 63 cases died in this series i.e. an average of 30.1% with a range of 16.6% to 48%.

In Lagos group 5 deaths took place in 30 pregnant cases, only one had occurred in a similar group of 16 non-pregnant females i.e. 16.6% versus 6.2%.

This fatal group had following peculiarities:—

- (i) Fifteen of the 19 fatal cases i.e. 79%, belonged to the poor class.
- (ii) The latter had no ante-natal care.
- (iii) They were all in the last trimester of pregnancy.

7. Foetal Wastage.

This shows total loss of 36.6% with 9.5% abortions and 19% premature deliveries.

Table I: Frequency in Various Trimesters

Hospitals	Total No. of Cases	TRIMESTER		
		1st	2nd	3rd
Military Hospital Rawalpindi	6	1 (16.6%)	1 (16.6%)	4 (66.8%)
Armed Forces Hospital Lagos, Nigeria	30	4 (13.3%)	8 (26.6%)	18 (63%)
Holy Family Hospital Rawalpindi	27	4 (14.8%)	6 (22.2%)	17 (63%)

Table II: Maternal Mortality in Our Series

Hospitals	No of deaths and percentages in various trimesters		
	M.H. Rwp.	A.F.H. Lagos	Holy Family Hosp. Rwp.
1st Trimester	—	—	1 (6.5%)
2nd Trimester	—	1 (20%)	1 (6.5%)
3rd Trimester	1 (100%)	4 (80%)	11 (87%)
Mortality in total No. of cases	1/6 = (16.6%)	5/6 = (83.3%)	13/27 = (48.1%)

Table III: Foetal Outcome in Our Cases

Pregnancy Out-come	Nos and Percentage in each series			Total Nos and percentages in combined series of 63 cases
	MH Rwp.	AFH Lagos	HPH Rwp.	
Abortions	1 (16.6%)	3 (10%)	2 (7%)	6 (9.5%)
Prematures N.N. Deaths	1 (16.6%)	5 (16.6%)	6 (22.2%)	2 (19%)
Still Births	—	1 (3.3%)	4 (14.8%)	5 (7.9%)
Term Live Births	4 (66.8%)	2 (19.70%)	15 (55.5%)	40 (36.4%)
Total Foetal Loss				

8. Biochemical and Histopathological Changes.

In the pregnant women these were more severe and took longer periods to recover than controls, it was best demonstrated in Lagos group.

9. Follow up.

No significant sequelae were detected during a 2 years follow up, on 15 women in Lagos, including repeat needle liver biopsies on 10 of them.

10. Transplacental spread:

Histopathological studies were carried out on liver biopsies of some aborted foetii of mothers suffering from viral hepatitis in Nigeria. No evidence of the disease was detected amongst them.

11. Congenital Malformations:

They were not detected in this series.

Other factors like geographical, social and seasonal variations were not noted in our series.

Discussion

Viral hepatitis is widely prevalent in most under-developed countries. But there is considerable controversy over some of its aspects

in association with pregnancy. According to some quoted series from the West, it is said to be no more common in pregnancy than in the non-pregnant state. We found it to be definitely higher in the former group. In Lagos, where this effect was studied, particularly, the incidence was 1.2% in pregnancy while it was only 0.7% in an otherwise comparable group of non-pregnant females and was 0.6% in the males. Many other workers have also repressed similar findings (Mazaud et al., 1959; Gelpi 1970; Borhanmanesh et al., 1973; Christie et al., 1976).

Such figures however have been considered fallacious by certain critics like Kunnelis et al. (1965), Scherlock (1968) who argue that these have been collected during epidemics, retrospectively and from obstetric wards only i.e. on more easily diagnosed cases. But none of these counter-arguments were applicable to our study, which mostly included prospective Cases, with controlled comparisons between Patients in obstetric and gynaecological, versus medical wards. They were from communities with equal access to all the departments of concerned hospitals, thus excluding any case selection.

On the basis of above findings we feel that our results depict the actual epidemiology of the disease in pregnancy at least in such parts of the World where we investigated it. Further part of the discussion deals with the features of the disease with lesser controversy.

Lack of association of patient's age with the severity or mortality of viral hepatitis in pregnancy in our series was in accordance with the current opinion (Christie et al., 1976). Similar was the case with parity.

In general agreement with most people, we also found obviously high frequency in last trimester of pregnancy, in all the three series. It ranged from 60-67%. However few critics as mentioned above, disagree with this trend also.

Most of our severe cases of viral hepatitis in pregnancy also occurred in the third trimester amounting to 66.6%. In fact higher frequency of hepatic necrosis in such cases of late pregnancy accounted for 16 out of our 19 fatal cases. These views are shared by others like Morrow et al. (1968) and Ezez and Bourdon (1956) who also believe that such cases get worst towards the onset of labour. A total mortality of 30.1% with a range of 16.6-48% in our series compares well with findings of Chuttani et al. (1966). This also is certainly higher in pregnancy, as seen in our Lagos series, where it was 16.6% as compared to 6.2% in the non-pregnant state. Christie et al. (1976) found it to be 12.9% in pregnancy and 1.6% without it.

The actual cause of these associations, however is not very clear. Basic malnutrition i.e. protein deficient diet coupled with pregnancy, by strongly taxing the hepatic reserves may be at the root. This has been amply demonstrated by workers from New Delhi (Malkani and Grewal, 1957) and Libya (Christie et al., 1976).

On the whole such high maternal mortality may be associated with the following factors:—

- (i) *Socio-economic state*:—Fifteen of our 19 deaths (i.e. 79%) were amongst poorer women. This association has also been mentioned by Hammerli (1966) and beautifully demonstrated by Malkani and Grewal (1957). The latter found 8.3% fatalities above a certain income group as compared to 43.8% below it.
- (ii) *Stage of Pregnancy*:—Much higher rates were found in later pregnancy showing significance of depleted hepatic reserves.
- (iii) *Hospitalisation Facilities*:—While studying Table II above, one notices about 16% fatalities in both Armed Forces hospitals, as compared to 48% in a civilian hospital despite military hospitals being well privileged. This may be due to early hospitalisation even for minor degree of illness in the former group as compared to later and emergency admission of only more serious cases in the latter.
- (iv) *Ante-Natal Care*:—It is observed that 79% of our fatal cases had no ante-natal care, particularly noticeable in the Holy Family Hospital group.

There was a total foetal loss of 36.6% with 9.5% abortions and 19% prematures (significantly higher than the usual rates of 10-12%). Schiff (1965) also quotes similar figures of 41% amongst his Mediterranean group, though the others like Hammouda from Mecca (1962) differ. Cahill (1962)—quotes 10.3% loss, Adams and Combes (1965) state it as 12.4%. Still birth rate in this series was 7.9% and Arora (1967) mentions it to be 11.1%.

No transplacental spread could be demonstrated in our patients, though this is known to rarely occur in some cases (Schiff 1965).

Congenital Malformations:—They were not detected in our cases, but they have been reported in the literature like one case by Cahill (1962), and a questionably associated case of Down's Syndrome by Barnes (1970). Hammerli (1966) on the other hand, considers such evidence as non-convincing.

Sequellae of any significance could not be detected in our cases. Unlike the recognised severity of viral hepatitis noticed in Pakistani soldiers as compared to those in U.S.A. (Akhtar 1965), no significant racial influence was observed in the present series associated with pregnancy. Nor was the influence of geographical or seasonal variations remarkable.

Conclusion

Our results show higher incidence and increased mortality due to acute viral hepatitis in pregnancy. Greater frequency and severity was observed in third trimester, more so amongst ill nourished, poorer women with no antenatal care. Added foetal loss was also noticed. These results are in agreement with many other workers particularly those from developing countries. The counter arguments posed by some critics were not applicable to our cases.

It is inferred that prevention, early detection and energetic management of such cases is imperative.

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