

INCIDENCE OF RH PHENOTYPES AND ISO-IMMUNISATION DURING PREGNANCY AMONGST THE BENGALEE:

by

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Hartman and Brendemoen (1953) obtained Rh antibodies approximately in 5 per thousand of Rh negative mothers during their first pregnancies. In Rh negative women in their second pregnancy, the percentage of Rh antibodies has been observed to be much higher. They were 6.6% in the series of Clemens and Walsh (1954) and 4.1 per cent in the series of Mollison (1961). In a study of a total of 30,614 deliveries at the St. Joseph Hospitals, U.S.A., 4,275 mothers belonged to the Rh negative type. Jacobs and Kohn (1956) observed that the incidence of erythroblastosis foetalis was 1 in 419 pregnancies and the incidence of affected infants of Rh negative mothers was 1 in 59 pregnancies. In the present communication, the incidence of Rh iso-immunisation has been studied in a series of 1,027 pregnancies. In India, the incidence of Rh phenotype has been studied in some centres by Roy *et al* (1959) and Sen *et al* (1959), but studies on Rh iso-immunisation are yet scanty.

Material and Methods

Blood samples from mothers of

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second gravida and onwards and cord blood from the respective babies were collected just after confinement. The samples after collection were tested for determination of the Rh factors by tube technique with anti-D sera from Ortho Laboratory. Two hundred and eight random samples of mothers were tested for determination of Rh phenotype by tube technique with anti-D, anti-C and anti-E sera obtained from Ortho Laboratory. In cases of Rh negative mothers details of Rh phenotype of both the foetus and the father were also found out. Direct Coombs' test of the foetal blood and indirect Coombs' test of the Rh negative mothers' sera were done by standard technique to find out the incidence of Rh iso-immunisation during pregnancy. The results of these investigations are given in the following tables:

Results

Incidence of Rh isoimmunisation during pregnancy amongst the Bengalees from 2nd gravida onwards: Rh iso-immunisation: 1 in 1027—total pregnancies, 1 in 21—Rh negative mothers.

In the above group there were 21 Rh negative mothers of whom 16 gave birth to Rh positive babies; in only one case Rh iso-immunisation

TABLE I

Incidence of Rh negative blood amongst the pregnant mothers and foetuses

	No. of cases	No. of Rh positive	Per cent	No. of Rh negative	Per cent
Mothers	1027	1006	97.96	21	2.04
Foetus (cord blood)	1009	996	98.71	13	1.29

TABLE II

Nature of Rh phenotype amongst the Bengalee pregnant mothers:

	No.	Per cent
Total No. of samples Tested	— 208	— 208
CDe	150	72.11
cDE	7	3.36
CDE	34	16.35
cDe	12	5.76
Cde	Nil	Nil
cdE	Nil	Nil
CdE	Nil	Nil
cde	5	2.42
	208	100.00

was present. The details of this case are given below:

Case No. 21

Mother—4th gravida.

Obstetric History:

1st died after 2 days due to haematemesis.

2nd died after 4 hours with manifestations of jaundice.

3rd abortion at 5 months.

4th—born at full-term with manifestations of erythroblastosis foetalis and was saved by exchange transfusion.

Mother—Rh genotype—cde/cde

Indirect Coombs' test—positive

Father—Rh phenotype cDE

Foetus—Rh phenotype cDE

Direct Coombs' test—positive

Hb%—9.20 gm.

Jaundice ++

Haematological investigation revealed—erythroblastosis foetalis due to Rh iso-immunisation.

Discussion

From the relevant data, it appears that the incidence of erythroblastosis foetalis is not very common in our country. In our previous communication *Roy et al* (1959), it has been shown that the incidence of Rh negative blood amongst the Bengalee is 5.2%. *Sen et al* (1959) estimated the Rh negative incidence amongst pregnant mothers to be 3%. In the present communication, it has further been observed that the incidence of Rh negative blood amongst the pregnant mothers is still less—only 2 per cent. The incidence of Rh iso-immunisation during pregnancy has been obtained as 1 in 1027 total pregnancies and only one case amongst 21 Rh negative mothers. *Jacobs* (1956) obtained Rh iso-immunisation during pregnancy in 1 in 419 total pregnancies and 1 in 59 Rh negative mothers. The incidence of erythroblastosis foetalis is higher in Western countries as the Rh negative rates vary from 16-18%. As the total number of pregnant mothers studied in the present communication is not very high, there is much scope for further study on these lines to find out the incidence of Rh

iso-immunisation during pregnancy amongst Indians in a large series of cases.

Summary

1. Incidence of Rh negative blood amongst the pregnant Bengalee mothers is 2 per cent.

2. Incidence of Rh iso-immunisation during pregnancy is 1 in 1027 total pregnancies and 1 in 21 Rh negative mothers.

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