

## **Hemolytic Disease of the Newborn Due to ABO Incompatibility**

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### **Summary**

*This study of ABO-Hemolytic disease of the newborn showed that this is a much commoner condition. The mothers mostly belonged to Blood group 'O' while babies were either Blood group 'A' or 'B'. The Rh. group was positive in all cases.*

### **Introduction**

The condition of Hemolytic disease of the new-born (HDN) due to ABO incompatibility is much more common than that due to Rh. incompatibility<sup>1,2</sup>. This condition is encountered much more commonly in situations when the mother has Blood group 'O'<sup>1,3</sup>. The reason for this is that in Group 'O' mothers the titres of Anti-bodies Anti-A and Anti-B is much higher<sup>4</sup>. In HDN due to ABO incompatibility, the babies present with jaundice during the first 24 hours of birth<sup>5</sup>. Only rarely can this condition be severe enough to cause brain damage<sup>1</sup>. Some babies are severely jaundiced and need exchange transfusion<sup>1</sup>. In HDN due to ABO incompatibility, the first child is affected in contrast to Rh. incompatibility which occurs in subsequent pregnancies<sup>5</sup>. Racial difference in frequency of ABO Hemolytic disease is also seen. The incidence of ABO Hemolytic disease is more common in African newborns than in white infants<sup>6</sup>.

### **Material and Methods**

This series was collected from Paediatric Unit, Mayo Hospital, Lahore during a period of 26 months from March 1981 to May 1983. The total number of jaundiced babies admitted during this period was 270. The age at the time of admission was 1-5 days and most of them had developed jaundice within 24 hours of birth. Out of all the jaundiced babies, only those were selected who had no obvious cause for jaundice except for their ABO blood group being incompatible with their mothers.

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A total of 47 babies out of the 270 were found to be fulfilling our criteria. Birth weight of these babies was from 2.5 kg. to 3.3 kg. There was no clinical evidence of Viral or Bacterial infection.

Venous blood sample was taken from the babies in tubes with anti-coagulant and the following tests were performed: (Method adopted was that of Dacie and Lewis<sup>7</sup>).

1. Hb%.
2. ABO Blood grouping.
3. Rh. typing.
4. Reticulocyte count.
5. Direct and indirect Coomb's test.
6. Direct and indirect Serum bilirubin.
7. The maternal ABO and Rh. groups.

### Results

Forty seven out of a total of 270 jaundiced babies were chosen for this study. These babies had developed jaundice within 24 hours of birth. Birth weight was 2.5 - 3.3 kg. There was no clinical evidence of Bacterial or Viral infection. From results it was seen that 37 out of 47 mothers belonged to group 'O'. Results are plotted in Table-I.

TABLE-I

Mother Group	No. %age	Babies Groups		
		A	B	AB
O	37 (78.72)	19 (40.42)	18 (38.3)	Nil
A	7 (14.89)	Nil	3 (6.38)	4 (8.5)
B	1 (2.13)	Nil	Nil	1 (2.13)
AB	2 (4.26)	1 (2.13)	1 (2.13)	Nil

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Hb. count: The maximum level of Hb. noted in these babies was 18.6% and minimum value was 10mg.%.

Reticulocyte count: This was noted to be in the range of 4-5%.

Serum Bilirbsin: The level of Bilirubin ranged from 6.8 mg to 28.5 mg%. Two babies required exchange transfusion.

### Discussion

This study was done in Paediatric Unit, Mayo Hospital, Lahore. Out of the total 270 babies, 47 were found to be purely due to ABO incompatibility. Much work has been done in this field<sup>1,7</sup>. In the present study it was observed that 37 mothers out of 47 belonged to group 'O' which is similar to study done by other workers. Two of the babies were severely jaundiced and needed exchange transfusion.

### References

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