

A Study on Foetal Wastage and ABO Blood Groups Incompatibility among the Gonds of Garriyaband, Chhattisgarh, India

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ABSTRACT In the present paper an attempt has been made to study foetal wastage and ABO blood groups incompatibility among the Gonds of Garriyaband, Chhattisgarh, India. It has been observed that the couple combinations having O type wives, A or B type husbands showed maximum foetal loss. As far as abortion is considered it is higher in A type husband and O type wife and still births higher in couple combination A type husband and B type wife.

INTRODUCTION

The basis of human blood group system is the antigenic character of red cell antigens ABO which when introduced into the body can provoke the formation of specific antibodies. Antigens and their specific antibodies react with each other when they come in contact. Red cells carry the blood group factors which reside on the surface of the red cells. Their presence on the red cells determines the basic four blood groups- A, B, AB, and O. In cases of incompatible mating anti A and anti B appear to attack the foetus early in pregnancy resulting in abortion or miscarriage. Levine (1943 and 1958) also indicated that incompatible ABO mating, apart from such Rh(D) matings result in hemolytic diseases. The blood group incompatibility influences the fertility and mortality rates and also the viability of certain blood group phenotypes in populations

The Department of Family Welfare, Govt. of India has identified 90 poor performing districts which are characterized by high birth rates, high infant mortality rates and very low level of institutional deliveries (Sharma and Chakraborty 2002).

The aim of the present study is to establish a relationship between ABO incompatibility and foetal wastage among the Gond tribe of Garriyaband in Raipur district of Chhattisgarh, India.

Gond is a scheduled tribe. The tribe is supposed to be originally the inhabitant of the banks of Godavari river. Gonds belong to one of the major linguistic group i.e. Dravidian as Dramila

was used in ancient Pali and Jain literature as a name for the people of the Tamil country. Gond is a homogeneous, monogamous, agriculture based unifying population. Their agriculture is mainly weather dependent.

MATERIAL AND METHODS

The present survey was carried out in four villages viz., Tawarbhara, Dongri, Konkri and Nehergaon among the Gonds of Raipur district of Chhattisgarh. A total number of 104 couples selected randomly were approached to get information about their reproductive life. Detailed information about abortions, still births, early neo natal deaths and neo natal deaths were gathered. As it was a retrospective study, much care was taken to gather information as accurately as possible by interviewing both the parents which was also verified by interviewing the elders as old aged people. The blood groups of parents were determined by serum agglutination method using anti A and anti B sera.

The compatibility and incompatibility of the couples on the basis of their blood groups was based as per Table 1. Out of 16 incidences of couple combinations with regard to ABO blood groups, 9 couples combinations are of compatible type and 7 are of incompatible type.

RESULTS AND DISCUSSION

The percentage of compatible and incompatible marriages among the Gonds has been presented in Table 2. Among the Gonds the

Table 1: List of possible ABO compatible and incompatible mating types

<i>Possible Matings</i>			<i>Incompatible Matings</i>		
<i>Male</i>		<i>Female</i>	<i>Male</i>		<i>Female</i>
A	X	A	A	X	B
A	X	O	A	X	AB
B	X	B	B	X	A
B	X	O	B	X	AB
O	X	O	O	X	A
AB	X	A	O	X	B
AB	X	B	O	X	AB
AB	X	O			
AB	X	AB			

Table 2: Percentage of compatible and incompatible marriages among the Gonds of Garriyaband.

<i>Mating</i>	<i>Percentage</i>
Compatible	114 (55.33%)
Incompatible	92 (44.66%)

Figures in parentheses are percentages.

percentage of compatible matings was observed to be higher (55.39%) than incompatible matings (44.66%). Foetal losses in different couple combinations among the Gonds have been

presented in Table 3. Reproductive performances in ABO compatible and incompatible matings have been presented in Table 4. Total pregnancy wastage among the Gonds has been observed to be 31.55% in incompatible matings and the percentage to foetal wastage is also slightly higher in them i.e. 35.86% as compared to compatible matings (28.07%). The percentage frequency of abortions and still births are also higher in incompatible matings as compared to compatible matings. The percentage frequency of neonatal deaths are almost equal in both the types of matings. Table 3 reveals that the incidence of stillbirths and abortions are higher in case of O husband and A wife.

High foetal wastage occurred in marriages between O type wives A or B husband. In these cases the foetus contain A or B antigen (inherited from father) that is not present in the mother herself. In other words, the mother carry naturally occurring antibodies in her serum, anti A or anti B. Leak through the placental membrane of an O type mothers may quickly be destroyed by already

Table 3: Foetal losses in different couple combinations among the Gonds of Garriyaband.

<i>Mating type</i>			<i>Early Neo natal deaths</i>	<i>Neo natal deaths</i>	<i>Abortions</i>	<i>Still births</i>	<i>Living children</i>	<i>Total pregnancies</i>
<i>Male</i>		<i>Female</i>						
<i>A. Compatible</i>								
A	x	A	1	1	1	2	10	15
B	x	B	-	-	2	2	-	4
AB	x	AB	-	-	-	-	2	2
O	x	O	-	-	2	1	18	21
A	x	O	2	2	1	2	25	32
B	x	O	1	1	2	4	17	25
AB	x	O	-	-	-	-	1	1
AB	x	A	-	-	1	-	5	6
AB	x	B	2	1	-	1	4	8
Total			6	5	9	12	82	114
<i>B. Incompatible</i>								
O	X	A	-	1	4	3	2	10
O	X	B	1	1	-	3	4	9
O	X	AB	-	-	2	-	8	10
B	X	A	1	-	3	1	18	25
A	X	B	-	1	2	7	13	23
A	X	AB	-	-	-	-	4	14
B	X	AB	1	1	1	-	10	13
Total			3	4	12	14	59	92

Table 4: Reproductive performance in ABO compatible and incompatible matings in the Gonds of Garriyaband.

<i>Mating type</i>	<i>Early Neo natal deaths</i>	<i>Neo natal deaths</i>	<i>Abortions</i>	<i>Still births</i>	<i>Living children</i>	<i>Total pregnancies</i>
Compatible	6 (5.26)	5 (4.38)	9 (7.89)	12 (10.52)	82 (71.92)	114
Incompatible	3 (3.26)	4 (4.34)	12 (13.04)	14 (15.21)	59 (64.13)	92
Total	9 (4.36)	9 (4.36)	21 (10.19)	26 (12.62)	141 (68.44)	206

Figures in parentheses are percentages.

existent anti A or anti B antibodies. Erythroblastosis foetalis due to anti A or anti B may occur (Reddy and Sheshu 1986; Pandey et al. 1997).

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