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SHORT COMMUNICATION

EFFECT OF CONSANGUINITY ON THE OUT COME OF PREGNANCY IN KARACHI WOMEN

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ABSTRACT

Consanguinity is relationship by blood that is being descended from common ancestors. In Pakistan marriages among tribes and cousins are common. Consequently it weakens the genetic material. Lethal mutated gene which is usually recessive are covered by normal dominant allets. Repeated marriages in the same family or tribes increases the risk of expression of lethal recessive genes. The result of repeated cousin marriages is increased risk of having offsprings with fetal abnormalities.

INTRODUCTION

The mutated gene is recessive to its allele coding for normal function. It is estimated that each individual carry as many as six lethal recessive genes hidden behind the protection of normal dominant alleles. Autosomal recessive illness therefore can occur only when both allels are abnormal. The illness appears suddenly in the family. Hetrozygous carriers of the abnormal gene usually have no clinical problems. Only those who are homozygous for the gene have the manifestations of the illness, and this requires the parents to be unaffected carriers. Both male and female may carry the gene. There is a 50% risk that the will be passed to any child in accordance with the mendel's first law of segregation. Consanguinity greatly increases the risk of each parent carrying the abnormal gene. When carrier parents marry, each child has a 1 in 4 chance of being affected. There is a 3 in 4 chance that the children will be clinically unaffected. If the affected individual can procreate, all the children will be carriers for the abnormal gene, provided the spouse is not a carrier. If the spouse is a carrier, each child will be either affected (50% risk) or a carrier (50% risk) (Yashida, 1982 and McKusick, 1983). Genetic diseases are thought to arise as a point mutation, i.e. the mutation occurs at a specific molecular site in the genome. (Stanbury, 1983 and Teriverdian, 1982). Chromosome studies on products of conception of spontaneous abortions have revealed a high incidence of abnormalities. In fact 50% of abortions occurring in

the first trimester have a chromosome disorder. In about 6% of couples (3% of individuals) a cytogenetic cause for repeated abortions will be found by examining specimens of blood from the mother and father. Non-viability of concepts will lead to abortions (Kolodry E.H. (1976). A congenital disorder is, strictly speaking one that is present at birth. However, the term includes genetic diseases, and because some genetic conditions do not become apparent until later life, the term has now been expanded to include those disorders where the pathological mechanism operates prior to birth, irrespective of when the disease first became evident (Kalter, 1983).

PATIENTS AND METHODS

This study was conducted in Nasirabad Hospital, Karachi. During Jan., 1991 to Dec., 1995. Three hundred couples were selected for research, detailed history was recorded. The criteria of inclusion of patients were divided into two groups. One hundred fifty patients were placed in group A and one hundred and fifty patients were placed in group B. All patients were healthy and had no prior blood relation with each other, but on the other hand in group B, all couples were first cousins with history of consanguinity in the previous three generations. All the ages of the couples in group A and B were between 25 to 35 years.

RESULTS AND DISCUSSION

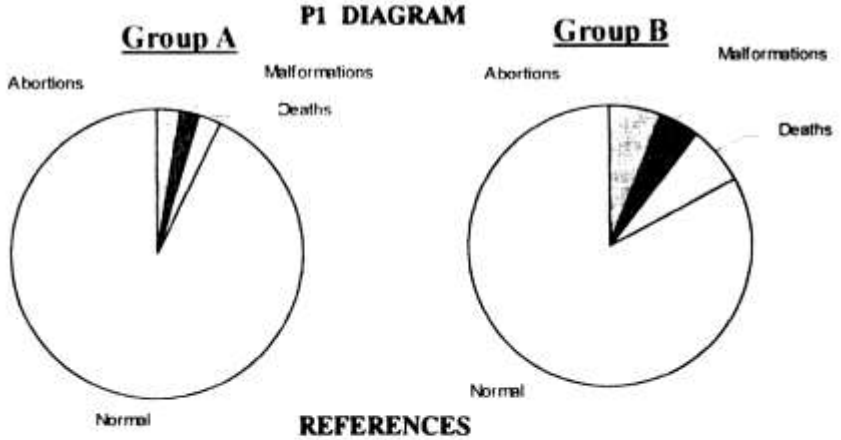
In the South Asian countries the marriages between the first cousins are quite common. The present work conducted at Karachi, for research purpose; 150 healthy fertile couples having no previous relationship with each other were selected and placed in group A, in group B 150 healthy fertile couples were selected who were not only first cousins but their parents and grand parents were also first cousins. Effects on the offsprings and the outcome of pregnancy was studied.

It was found that group A couples had 2.66% rate of repeated abortions in a first trimester, 2.66% parental deaths and 2% congenital malformations and couples had normal offsprings. In group B it was found the rate of repeated first trimester abortions were 6%, perinatal death is 6.66% and 7% congenital malformations and couples had normal offsprings.

Therefore it is concluded that the rate of congenital malformations, perinatal deaths and unexplained first trimester abortions is higher in couples having common blood relationships as compared to those couples having no prior blood relationships. The overall result were concluded that the percentage of normal offspring is 92.66% in group A and 82.66% in group B. The percentage is much higher in group B in respect of group A.

Table

	Group A (No blood relation with each other)		Group B (Blood relation with each other)	
	No. of Couples	Percentage (%)	No. of Couples	Percentage (%)
History of repeated abortion in first trimester	04	2.66	09	6.00
Congenital Malformation	03	2.00	07	4.66
Perinatal deaths	04	2.66	10	6.66
Couples having normal offsprings	139	92.66	124	82.66
Total	150		150	



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