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Research Article

NEURAL TUBE DEFECTS AND USE OF HERBAL MEDICATION FOR THE ZEAL OF MALE BABY

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ABSTRACT

A prospective study was carried out to collect data on medication taken for the zeal of male baby during pregnancy in Indian women. It is well accepted that drugs can have adverse effects on the developing fetus. Although, numerous studies show that medication during pregnancy is wide spread, there still is serious lack of comprehensive and valid data concerning the risk of drug during pregnancy. The percentage of medication taken by the mothers having deformed babies are 25% and statistically significant while comparing with controls at 0.05 probability level. The information found in literature is scanty and incomplete in terms of formal studies of the extent and pattern of use of drugs used in pregnancy. The evaluation confirmed the need for systematic permanent surveillance of drug used during pregnancy, so as to avoid the use of data based on widely differing context.

Keywords: Neural Tube Defects, Medication, Male baby.

INTRODUCTION

Neural Tube Defects (NTDs) are common congenital anomalies that substantially contribute to childhood morbidity and infant mortality. Much factor viz. socioeconomic status, maternal illness or medication use during pregnancy, maternal diet or vitamin intake has been associated with the risk for NTDs in offspring¹. Yet, there is still a serious deficit in the knowledge of the etiology of congenital malformations. Most of the authors agree that about 20% are caused by genetic factors and chromosomal anomalies and that a further 10% are caused by environmental factors, but in the majority of the cases 65-75% causes are unknown². Maternal and paternal exposures to selected drugs have been postulated to contribute to the etiology of congenital anomalies³ and to other adverse pregnancy outcomes. A paucity of data, however, exists regarding potential risks for specific anomalies, with nearly no data available for NTD risks⁴. We examined data from a population based case control study to investigate whether maternal drug use for the zeal of a male baby during pregnancy increased the risk for NTDs among offspring.

MATERIALS AND METHODS

Two hundred and eighty seven mothers were interviewed after delivery in the pediatric/obstetric hospitals. The well-trained

person for all participants of the respective study carried out interviews. The interviews were supplemented by the patient report information. A questionnaire was developed and included the following parts:

1. Personal data of the mother
2. Data on pregnancy and drug history during pregnancy
3. Sex of the baby affected or earlier live

The details regarding their economical status, obstetric history, retrospective drug intake for the zeal of male baby were collected and recorded. Every effort was made to identify the drug taken. Babies were examined for congenital malformations and details regarding the baby were obtained through the mother and father. For statistical analysis the data were stored and analyzed using correlation and chi-square test.

RESULTS

Analysis of 287 mothers whose children were born between 1995 to 1997 shows that percentage of women recorded a drug intake during pregnancy for the zeal of male baby. It is remarkable that on the one hand the birth rate has dramatically increased and the number of birth defects in India has increased. The mothers in the present study taken drug from unauthorized / local physician or self medicated. The mean age of mother in affected babies was 24.52 ± 0.22 and in controls it was 25.65 ± 0.39 . All the mothers belong to socio-

economically-poor families and most of them were illiterate. The medication taken for the zeal of male baby as compared to control was statistically significant and the χ^2 value was obtained 4.59, which is significantly, varies at 0.05 probability

level. We also computed correlation coefficient between malformation and medication. The correlation coefficient obtained was negative (-0.12) and it was significant at 0.05 probability level.

Parity							χ^2 value
	0	1	2	3	4	N	
NTD	8	133	99	37	10	287	4.95
Control	0	57	36	17	0	110	
Medication During Pregnancy							χ^2 value
	Medication Taken		Medication not Taken		N		
NTD	71		216		287	4.59*	
Control	16		94		110		

DISCUSSION

Medication during pregnancy revealed a significant effect on the occurrence of NTD. Teratological effects of a number of drugs on central nervous system have been documented^{5,6}. Since a teratogenic agent has the ability to produce congenital defects during its genesis in the early embryonic or fetal life which may lead to major or minor deviation from normal, morphology and function. A number of drugs, which were used by the patients investigated during the study, were non-prescribed and taken for the zeal of male baby. Although, the reports on the pattern of drug intake during pregnancy in western women are available⁷⁻¹², but it is altogether different from the present study. It is a common process in the Indians that every one desires a male baby as they have a belief that only male child will carry their ancestral progeny and the drug was generally used by the women / families who have more female babies and very common in the rural part of the India. The information of drug taken during pregnancy in Indian women is meager^{13,14}. The information generated during this study indicates the high incidence of NTD in mothers who had taken the medicines as compared to control. This is possible because of the ignorance of the patients about the teratogenic component of some of the drugs used during different periods of the pregnancy. But medicines used for the zeal of the male baby from local unauthorized, traditional or other unqualified practitioners were mostly taken during the first trimester of pregnancy which is the most sensitive period as most of the organogenesis especially of the nervous system operates in this period¹⁴. It may be the major cause of increasing the incidence of NTDs in such mothers. Medication for diabetics increases NTD risk by 21 times¹⁵⁻¹⁸. Maternal antiepileptic drugs like valproic acid and other street drugs elevate the NTD chances¹⁹⁻²². Rosa²³ stated that the use of anti-convalescent carbamazepine also increased the number of NTDs. Our studies are consistent with the recent findings of Shaw *et al.*³ who have suggested that medication during pregnancy show a significant increase in the NTD risks. Recently, Martinez²² has suggested that the women who are addicted to illicit drug during pregnancy have an increased risk for infants with several congenital defects. The information on this subject is still meagre to predict any specific conclusions. The teratogenic and embryotoxic risks

and side effects of drugs in unborn life cannot be concluded from the studies with a small sample survey. A screening on the drug exposition in pregnancy and the possible side effects in the baby is desirable for higher safety. The unborn life, drug exposition including self medication of pregnant women should be largely observed.

However, it is strongly recommended that a systematic survey of the patients pertaining to the definite drug use during each trimesters of pregnancy need to be undertaken in near future to specifically point out the teratogenic effect of a particular drug at a specific stage of pregnancy which can be implemented for screening¹⁸.

CONCLUSION

Neural tube defects (NTDs) are a group of birth defects presumed to have a common origin in failure of the neural tube to develop properly during the embryonic stage. Certain epilepsy, parental recreational and street medications have been proven to increase the risk of neural tube defects. So it is advisable to the parents that the first trimester is very crucial for the development of fetus and parents should avoid self-medication, drugs from unauthorized and local practitioners as well as all those drugs which are not scientifically tested for their teratogenic effects.

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