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STUDY OF CONGENITAL MALFORMATIONS IN HAMIDIA HOSPITAL , BHOPAL

Plastic Surgery

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ABSTRACT

It is a cross sectional study conducted in department of plastic surgery Hamidia Hospital, Bhopal .This Study focuses on incidence of structural congenital malformations among neonates,and evaluation of associated risk factors. Most commonly affected is musculoskeletal system (40%). The risk factors are history of consanguinity (70%), malnutrition (90%) and previous history of abortions (40%).

KEYWORDS

INTRODUCTION

Congenital anomalies can be defined as structural or functional abnormalities including metabolic disorders, present at birth. These defects are of prenatal origin resulting from defective embryogenesis or intrinsic abnormalities in the process of development. Birth defects can be isolated abnormalities or part of a syndrome and continue to be an important cause of neonatal and infant morbidity and mortality[1]In many cases, the causes of congenital anomalies are unknown; however, several factors known to be associated are genetic factors, maternal infections like rubella, cytomegalovirus, toxoplasmosis and syphilis, drugs like thalidomide, streptomycin, tetracycline, phenytoin , smoking, irradiation, maternal age, health, geographical factors and dietary factors. Fetal anomaly scanning is the most powerful approach available for reducing the birth prevalence of infants with serious congenital abnormalities and increasing the chances of survival for those who are born. Finding of a correctable abnormality can be an indication for delivery to take place at a center with facilities for pediatric surgery, the finding of a severe uncorrectable abnormality may lead to early termination of pregnancy. This study was conducted to evaluate the incidence of structural congenital anomalies and to predict the variables which contribute in the incidence of congenital anomalies.[2,3]

This study attempts to determine the frequency of different structural congenital anomalies in our hospital population, and to identify the possible risk factors responsible for these anomalies.

MATERIALS AND METHODS

This study includes patients of congenital anomalies who had come to our OPD in the last 3 year, i.e. from 1st September 2015 to 31st August 2017 department of plastic surgery Hamidia Hospital Bhopal. Variables like maternal age, parity, consanguinity, abortions, sibling with malformation, nutrition, smoking ,alcoholism, family history of congenital anomalies, conceived after infertility treatment, maternal diabetes, infections, fever, drugs, history of intrauterine deaths were critically evaluated.

RESULTS

Table 1: Maternal Characteristics:

Character	Number	Percentage
AGE		
<20	13	2
20-30	584	92
>30	38	6
PARITY		
Nulliparous	318	50
Primi	204	32

Table 2: Distribution Of Risk Factors

Risk factor	Number	Percentage
Consanguinity	444	70
Abortions	254	40
Low nutritional diet	572	90
History of intrauterine fetal death	76	12
Maternal diabetes	63	10
Age > 35 yrs	25	4
Antiepileptic drugs	25	4
Sibling with malformation	25	4
Family history of anomalies	13	2

Table 3: Associated risk factors

Risk Factor	Number	Percentage
Preterm	184	29
Polyhydraminos	51	8
Breech	102	16
IUGR	38	6
Oligohydraminos	25	4

Table 4: Distribution Of Anomalies

ANOMALIES	NUMBER	PERCENTAGE
CRANIOSPINAL 7 (1.09%)		
Spina bifida	2	0.31
Meningoencephalocele	3	0.47
Sacro –coccygeal teratoma	2	0.31
PERIPHERAL NERVOUS SYSTEM 4 (0.62%)		
Neurofibroma	4	0.62
GASTROINTESTINAL 109 (17.09%)		
Tongue tie	1	0.15
Cleft lip & cleft palate	62	9.7
Cleft lip	11	1.73
Cleft palate	35	5.51
SKIN 46 (7.22%)		
Congenital Nevus	9	1.4
A V Malformation	6	0.94
Heamangioma	31	4.88
MUSCULOSKELETAL 209 (32.91%)		
Microtia	53	8.34
Anotia	6	0.94
Syndactyly	81	12.7
Polydactyly	30	4.72
Torticollis	7	1.1
Clubfoot	2	0.31

Depressed nasal bridge	4	0.62
Double upper lip	4	0.62
Macrodactyly	4	0.62
Limb reduction defects	17	2.67
Pectus carinatum	1	0.15
GENITOURINARY 27 (4.25%)		
Hypospadiasis	27	4.25
SYNDROMES 9 (1.4%)		
Crouzon syndrome	2	0.31
Pierre robin syndrome	4	0.62
Poland syndrome	1	0.15
Apert syndrome	2	0.31

Table 5 : Distribution of birth weight and type of delievery

	Number	Percentage
Type of delievery		
Preterm vaginal	184	29
Term vaginal	222	35
Ceaserean	229	36
Birth Weight		
<2.5 kg	350	55
>2.5 kg	285	45

A total of 635 patients with congenital malformation came to the plastic surgery department over 3 year study period. The commonest congenital anomalies was involving musculoskeletal system (32.91%)(table 4). Second most common system to involve was gastrointestinal system (17.09%). 92 % cases were in the age group of 20- 30 yrs and 6% were in the age group of >30 yrs(Table:1).In 56% of cases history of consanguinity was present(Table: 2), and about 50% were nulliparous 32% cases were primigravidae (Table 1). In 40% of cases history of abortions was present (Table: 2) .In 90% of cases malnutrition was observed (Table 2). Most common perinatal risk factors are preterm labor (34%), polyhydramnios (24%) and breech (22%) (Table: 3).

DISCUSSION

In most parts of India abnormalities of the musculoskeletal system were most commonly reported [4,5].

According to D. Agrawal et al,Among musculoskletal anamoly commonest malformation observed was Talipes and polydactyly[6] . However, In our study 32.91% cases involved musculoskeletal systems among which syndactyly(12.7%) was the most common malformation. Second most common congenital anomalies involved facial and neck structures but most of them are non-fatal.

In Amar Taksande's study Down syndrome being the most common syndrome [7]. In our study the most common syndromes associated with anomalies in our series included 4 case of pierre robins syndrome followed by 2 cases of Apert syndrome and crouzon syndrome each and 1 case of Poland syndrome.

Consanguinity is single most important factor which was found to increase the risk of congenital anomalies in [8,9]. Previous data showed a definite increase in incidence of congenital malformation in babies born to consanguineous parents.[10,11,12] In our study 35% of the cases consanguinity was noted. Appropriate health education about consanguinity and genetic counseling for consanguineous couples should also be established before marriage.

Previous study has statistically shown that mothers, above 30 years of age, stand at a higher risk of producing malformed babies [7]. Sugunabai [13] reported a higher incidence of malformation in the babies born to mothers aged over 35 years; maternal age is an important parameter in the birth of a congenitally malformed fetus. In our study 6% of the mothers were older mothers (30 years of age or older).

Previous study shown that the risk of serious birth defects increases from 2.5% for infants of women with no prior pregnancy loss to 4.2% for infants of women with three or more pregnancy losses [14]. In our study 40% of neonates presented with congenital malformation had history of one or more abortions to their mother.

With special reference to the neural tube defect (NTD), the incidence of NTD has markedly reduced in the developed countries following mass promotion and mandatory prescription of folic acid for pregnant mothers [15-18]. With improvement in the standards of living prenatal and antenatal health awareness, the overall incidence of NTDs has come down markedly in developed countries. Mothers who have given birth to children with NTDs should take 4 mg of folic acid per day for subsequent pregnancies.

CONCLUSION

In the present study, most of the mothers who had anomalous fetuses had risk factors like consanguinity and previous history of abortions, history of taking antiepileptic drugs, siblings with malformations .Other risk factors associated with Congenital malformations are preterm deliveries, polyhydramnios, oligohydramnios, IUGR, although rare it significantly produce physical and psychological trauma. Congenital deformities are a source of concern for the child's family, as some of these defects are visually very disturbing. Some of the risk factors can be avoided to decrease the incidence of these structural anomalies.

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