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RESEARCH ARTICLE

STUDY ON INCIDENCE OF CONGENITAL ANOMALIES AT A TERTIARY CARE CENTRE IN SOUTH INDIA

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ABSTRACT

Antenatal women with ultrasound detected anomalous fetus, attending OP at the Department of obstetrics and gynecology, Govt Rajaji Hospital, Madurai were admitted for evaluation. The purpose of the study is to find out the incidence of congenital anomalies. Among the 3261 antenatal cases, 63 cases of anomalous fetus were detected. The overall incidence of congenital malformation is 1.9%. central nervous system was the most commonly affected system among the lethal anomaly (27%). Isolated renal PCS dilatation was the most common non lethal anomaly. 45% of cases had a history of consanguineous marriage. Male fetus had a higher incidence of anomalies (61.2%). Most of the anomalies were detected during second trimester.

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INTRODUCTION

Aim:

To find the incidence of congenital anomalies in mothers attending OP at Government Rajaji hospital, Madurai.

MATERIALS AND METHODS

This a cross sectional analytical type of study. Irrespective of gestational age and risk factors all mothers with ultrasound detected anomalous fetus were included in the study from the period July 15th 2016 to October 15th 2016. Detailed history of age, consanguinity, folic acid intake, teratogenic drug exposure, medical disorders like diabetes, hypothyroid was taken. Expert ultrasound done at radiology department. The anomalies were categorized as lethal and non lethal. For lethal anomalies termination of pregnancy was suggested according to the gestational age. For non lethal anomalies, expert opinion from department of neonatology, pediatric surgery was obtained and pregnancy was carried till term. Correctable surgery was performed for 3 cases at pediatric surgery department.

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RESULTS

Total Number of mothers with anomalous fetus enrolled in the study- 63.

Table 1. Classification of anomalies

	Lethal	Non Lethal
Number	18	45
Percentage	28.5%	71.5%

Among the anomalies, most of them (71.5%) were non lethal, with CNS being the most commonly affected system in lethal anamolies. Renal PCS dilatation being the most common non lethal anamoly.

Table 2. Age distribution

Age	<20	21-25	26-29	30-35	>35
Number	3	46	8	3	3
Percentage	4.7%	73.3%	12.6%	4.7%	4.7%

Around 73.3% of mothers belonged to the age group 21-25years. Elderly mothers (>35years) constituted only 4.7%

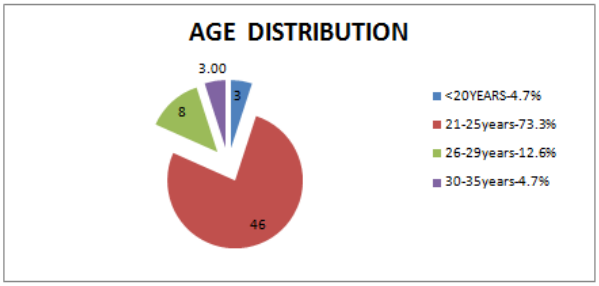

Table 3. Order of Birth

Birth order	Primi	2nd Gravida	3rd Gravida	4th Gravida and above
Number	30	21	10	2
Percentage	47%	33%	17%	3%

Anomalies were noted more commonly in first pregnancies (47%) closely followed by second (33%)

Table 4. Consangunity

Degree	1'	2'	3'	Non Consangnous
Number	0	3	25	35
Percentage		5%	40%	55%

40% of the cases had a history of THIRD degree consanguinity and 5% had history of second degree consanguinity.

Table 5. Previous history of pregnancy loss

	Abortion	Unexplained ipfd
Number	10	1
Percentage	15.8%	1.5%

Table 6. Gestational age at termination

Weeks	10-13	14-16	17-20	Term
number	1	0	8	22
percentage	3.3%		25.8%	70.9%

Since majority of the anomalies were non-lethal, pregnancies were continued till term. Lethal anomalies were mostly terminated at second trimester.

Table 7. Sex distribution after birth

Sex	MCh	FCh
Number	19	12
Percentage	61.2%	38.8%

Male fetus constituted 61.2% of the total.

Table 8. Distribution and incidence of individual congenital anomalies

Table 8.1. Central nervous system

Anamoly	Number
Anencephaly	1
Arnold chiari malformation	2
Hydrocephalus	2
Alobar prosencephaly	1
Lumbar meningomyelocele	3
Meckel gruber syndrome	1
Encephalomalacia	1
Blake pouch cyst	1
Prominent lateral ventricle	2
Prominent cistern magna	2
Choroid plexus cyst	1

Table 8.2. Cardiovascular system

Anamoly	Number
Hypoplastic left ventricle	1
Complex congenital heart disease	1
Large AV septal defect	1
Tricuspid atresia with ASD	1
Cardiac Rhabdomyoma	1
Persistent left SVC	1
TOF	1
Intra cardiac echogenic foci	8

Table 8.3. Respiratory system

Anamoly	Number
Laryngeal atresia	1
Bronchogenic cyst	1

Table 8. Gastro intestinal system

Anamoly	Number
Large CDH	1
Jejunal atresia	1
Duodenal atresia	1
Mesenteric cyst	1
Cleft lip/palate	1

Table 8.5. Renal

Anamoly	Number
Multicystic dysplastic kidney	1
PCS dilatation	15
Absent single kidney	2

Table 8.6. Others

Anamoly	Number
Trisomy 18	1
Anotia	1
Rhizomelia	1
CTEV	1

Table 9. Distibution of anomalies according to organ system

	Lethal	Non lethal	Total
Cns	11	6	17 27%
Cvs	4	11	15 24%
Rs	1	1	2 3%
Git	3	4	7 11%
Renal	1	17	18 28%
Msk	0	2	2 3%
Others Anotia		1	1 1.5%
Trisomy 18	1		1 1.5%

Table 10. Mode of termination of lethal anamolies

Mode	Mifepristone + Misoprostol	Mifepristone + Mechanical Induction	Labour Natural	LSCS
Number	6	3	6	3
Percentage	33.3%	16.6%	33.3%	16.6%

All the 18 lethal anamolies were terminated as soon as the diagnosis was established. LSCS for lethal anomalies were done for obstetric indication. All 3 cases were performed for previous LSCS with CPD first degree.

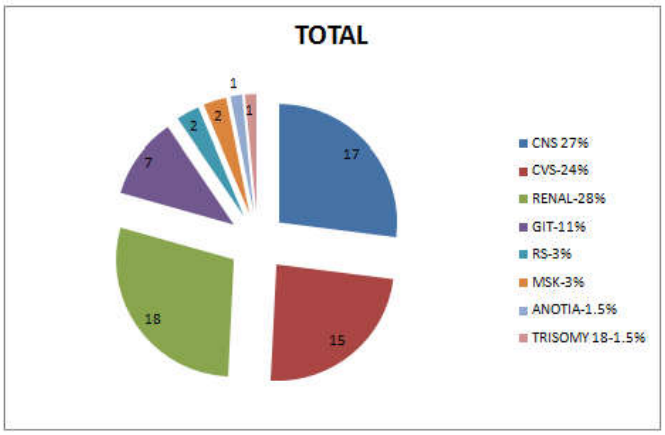

Table 11. Mode of termination of non lethal anamolies

Mode	LN	LSCS
Number	6	7
Percent	46.2%	53.8%

Among the 45 non lethal cases, 13 delivered.

Table 8. Correctable anomalies

No of cases operated	3
No of cases referred to higher centre	2
Death	1
Not willing for surgery	2

Corrective surgery was done for 3 cases. For a case of mesenteric cyst, Laparoscopic enucleation of cyst was done. For duodenal atresia, duodeno-jejunostomy was done. Two babies recovered uneventfully. For a baby with jejunal atresia gastrostomy was performed and the baby died on post operative day 2. Cadiac anomalies TOF and tricuspid atresia were referred to cardio thoracic higher centre.

DISCUSSION

Congenital malformation, according to W.H.O can be defined as structural or functional anomalies (like metabolic disorders) that occur during intrauterine life and can be identified prenatally, at birth, or sometimes may only be detected later in infancy. Mothers with anomalous fetus present a challenge to the obstetrician. The proportion of anomalous babies identified in the second and third trimester is increasing as a result of routine antenatal ultrasound screening, regular AN checkup. Also the availability of advanced NICU care leads to increased chances of survival of babies with correctable anomalies. Birth defects may be the result of genetic or environmental factors. This includes errors of morphogenesis, infection, epigenetic modifications on a parental germline, or a chromosomal abnormality. The outcome of the disorder will depend on complex interactions between the pre-natal deficit and the post-natal environment. In this study conducted at Govt. Rajaji hospital, Madurai, during the period of July 2016 to October 2016, the overall incidence of anomalous fetus was found to be 1.9% compared with the observation of amar taksande (2010) 1.91%, Bhat (1998) 3.7%, Mohanty *et al.* (1989) 1.61%, Baruah (2015) 1.4%. In the present study, the incidence of non lethal anomalies (71.5%) is found to be higher than lethal anomalies (27%) and renal anomalies are the most common non-lethal anamoly (28%). Overall, congenital malformation of renal system were highest (28%) closely followed by CNS anomalies (27%), CVS anomalies (24%), GIT anomalies (11%), respiratory anomalies (3%), musculoskel *et al* defects (3%), chromosomal (1.5%). Bhat (1998), Mohanty *et al.* (1989) and Baruah (2015) found a higher incidence of musculoskeletal system malformation. 73.3% of mothers belonged to the age group of 21-25years. Elderly mothers (>35years) constituted only 4.7%. Anomalies were noted more commonly in the first pregnancy (primipara-47%). The analysis on sex distribution after birth revealed male fetus constituted 61.2%. Mohanty *et al.* (1989) reported higher incidence of congenital malformations in male babies than in female babies. Similarly Amar taksande (2010) reported sex wise distribution as 62% males and 38% females, giving an M:F ratio of 1.63:1 .40%of the mothers had a history of 3` consanguinity similar to the observations of Bhat (1998). Among the cases included in the study 15.8% had a history of previous abortion and 1patient had a history of unexplained intra partum fetal demise. In this study, on-lethal anomalies were allowed to progress till term after obtaining respective opinions from speciality departments-neonatology, peadiatric surgery. Lethal anomalies were terminated with mifepristone 200mg & misoprostol 600mcg (33.3%), mifepristone with mechanical induction (16.6%), labour natural (33.3%) and LSCS (16.6%). LSCS was done for 3 cases due to obstetric indications (previous LSCS with CPD). Two babies expired before intervention- laryngeal atresia and large congenital diaphragmatic hernia. 3 babies were operated at the pediatric surgery department at GRH Madurai. Duodeno-duodenostomy for duodenal atresia, laproscopic excision of mesenteric cyst, resection and gastrostomy were done. Two babies recovered uneventfully. Baby operated for jejunal atresia died on post operative day 2, cause of death being sepsis. Babies with cardia anamolies were referred to higher neonatal cardio-thoracic centres for further management.

Conclusion

Routine AN ultrasound screening for anomalies with pre-conceptional folic acid intake and counselling regarding risk of consanguineous marriage can reduce the peri-natal mortality and maternal morbidity associated with congenital malformation of babies. Early termination of lethal anomalies is an important factor to be considered to reduce delivery related complications.

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