ORIGINAL RESEARCH PAPER
Volume - 12 | Issue - 04 | April - 2023 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

STUDY OF PATTERN OF CONGENITAL ANOMALIES AT TERTIARY CARE CENTRE

Obstetrics & Gynaecology

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ABSTRACT

Aims and objective: To describe the type and pattern of structural congenital anomalies among new born and their associated factors and to determine the prevalent types and pattern of congenital anomalies among new born delivered. **Material and methods:** A prospective observational study was conducted in department of obstetrics and gynaecology department , SMS medical college, Jaipur from May 2021 to June 2022 on 100 pregnant women who delivered in the hospital. Relevant information regarding maternal age, parity , gestational age , sex and consanguinity etc. was documented. **Results:** During the study 100 congenital anomalies were seen in delivered babies. 43% women were in the age group of 26-30 years. 54% women were muslim , 67% women were homemakers. 20% women had consanguineous marriage. 50% women were multiparous. Congenital anomalies were higher in women with no history of abortions and term pregnancies.86% of the malformed babies were alive. Most common system involved was central nervous system (32%). **Conclusions:** In present study it has been seen that the most of the congenital anomalies were found in the age group of 26-30 years of age, multipara and among muslim mothers .There is need for maternal education and offering genetic counselling to the eligible couples. Early detection of congenital anomalies through Targeted scans is of great importance as the majority of anomalies are detected on ultrasonography to reduce the burden associated with the congenital anomalies. Since most of the mothers were uneducated, there is a need to educate them regarding the importance of antenatal checkups and ultrasonography.

KEYWORDS

INTRODUCTION

Congenital anomalies are structural or functional anomalies that occur during intrauterine life and can be detected prenatally, at birth, or sometimes may be after birth.[1] Congenital anomalies are a major cause of neonatal mortality both in developed and developing countries. It accounts for 8-15% of perinatal deaths and 13-16% of neonatal deaths in India. It is not only a leading cause of fetal death, but also contributes significantly to preterm birth, childhood and adult morbidity along with considerable impact on the mothers and their families.[1]Congenital anomalies can be classified according to severity in minor, lethal and severe defects.Lethal defects are if the defects cause stillbirth (late fetal death) or infant death or pregnancies are terminated after the prenatal diagnosis of fetal defects in more than 50% of cases. Severe defects without medical intervention cause handicap or death. Mild defects require medical intervention but life expectancy is good. Lethal and severe defects together constitute major congenital abnormalities. Severe and lethal anomalies together are considered as major anomalies.[2] This study was conducted to evaluate the incidence of structural congenital anomalies in a tertiary health care centre and to find the variables which contribute to this incidence, in an aim to decrease the related perinatal morbidity and mortality.The purpose of the present thesis is to decrease perinatal mortalities by detecting the anomalies earlier and provide better neonatal care. We can also detect anomalies early and terminate the ones before the viable periods which will improve maternal mental health and guide them to do early registration in next pregnancy to prevent congenital anomalies.

Methods

A prospective observational study was conducted in department of obstetrics and gynaecology department , SMS medical college, Jaipur from May 2021 to June 2022 on 100 pregnant women who delivered in the hospital. All antenatal women diagnosed with congenital anomalies who delivered in the hospital and gave consent to participate in this study were included. All the demographic data like age, parity , religion , consanguinity , history of abortion and sex etc. were recorded in preplanned performa. Results were analyzed by simple statistical technique.

RESULTS

Table 1: Association Of Type Of Congenital Anomaly And Age

Age	Congenital Anomaly Type (n= 100)									Chi-Squared Test	
	CNS	Renal	Chromosomal	Respiratory system	Musculoskeletal	CVS	Gastrointestinal	Multiple Systems	Total	χ^2	P Value
18-25 Years	19 (59.4%)	4 (22.2%)	0 (0.0%)	2 (40.0%)	3 (17.6%)	4 (40.0%)	5 (31.2%)	0 (0.0%)	37 (37.0%)	20.830	0.469
26-30 Years	9 (28.1%)	10 (55.6%)	1 (100.0%)	1 (20.0%)	10 (58.8%)	4 (40.0%)	7 (43.8%)	1 (100.0%)	43 (43.0%)		
31-35 Years	4 (12.5%)	3 (16.7%)	0 (0.0%)	2 (40.0%)	4 (23.5%)	2 (20.0%)	4 (25.0%)	0 (0.0%)	19 (19.0%)		
>35 Years	0 (0.0%)	1 (5.6%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (1.0%)		
Total	32 (100.0%)	18 (100.0%)	1 (100.0%)	5 (100.0%)	17 (100.0%)	10 (100.0%)	16 (100.0%)	1 (100.0%)	100 (100.0%)		

Table 2 : Association Of Type Of Congenital Anomaly And Consanguinity

Consanguineous Marriage	Congenital Anomaly Type (n=100)									Fisher's Exact Test	
	CNS	Renal	Chromosomal	Respiratory system	Musculoskeletal	CVS	Gastrointestinal	Multiple Systems	Total	χ^2	P Value
Yes	9 (28.1%)	4 (22.2%)	1 (100.0%)	2 (40.0%)	0 (0.0%)	2 (20.0%)	2 (12.5%)	0 (0.0%)	20 (20.0%)	11.688	0.066
No	23 (71.9%)	14 (77.8%)	0 (0.0%)	3 (60.0%)	17 (100.0%)	8 (80.0%)	14 (87.5%)	1 (100.0%)	80 (80.0%)		
Total	32 (100.0%)	18 (100.0%)	1 (100.0%)	5 (100.0%)	17 (100.0%)	10 (100.0%)	16 (100.0%)	1 (100.0%)	100 (100.0%)		

Table 3: Association Of Type Of Congenital Anomaly And Parity

Parity	Congenital Anomaly Type (n=100)									Fisher's Exact Test	
	CNS	Renal	Chromosomal	Respiratory system	Musculoskeletal	CVS	Gastrointestinal	Multiple Systems	Total	χ2	P Value
P0	9 (28.1%)	2 (11.1%)	1 (100.0%)	2 (40.0%)	4 (23.5%)	3 (30.0%)	6 (37.5%)	1 (100.0%)	28 (28.0%)	15.819	0.920
P1	7 (21.9%)	4 (22.2%)	0 (0.0%)	1 (20.0%)	4 (23.5%)	2 (20.0%)	4 (25.0%)	0 (0.0%)	22 (22.0%)		
P2	15 (46.9%)	11 (61.1%)	0 (0.0%)	2 (40.0%)	9 (52.9%)	5 (50.0%)	6 (37.5%)	0 (0.0%)	48 (48.0%)		
P3	1 (3.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (1.0%)		
P4	0 (0.0%)	1 (5.6%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (1.0%)		
Total	32 (100.0%)	18 (100.0%)	1 (100.0%)	5 (100.0%)	17 (100.0%)	10 (100.0%)	16 (100.0%)	1 (100.0%)	100 (100.0%)		

Table 4 : Association Of Type Of Congenital Anomaly And Gender

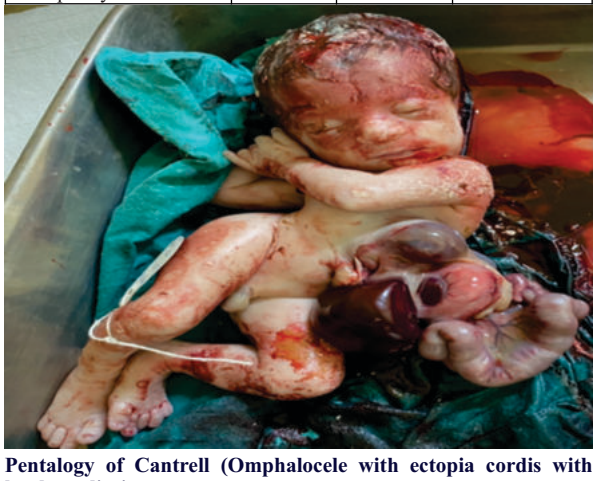
Gender of the Baby	Congenital Anomaly Type (n=100)									Fisher's Exact Test	
	CNS	Renal	Chromosomal	Respiratory system	Musculoskeletal	CVS	Gastrointestinal	Multiple Systems	Total	χ2	P Value
Male	6 (18.8%)	3 (16.7%)	0 (0.0%)	4 (80.0%)	9 (52.9%)	4 (40.0%)	10 (62.5%)	0 (0.0%)	36 (36.0%)	19.443	0.003
Female	26 (81.2%)	15 (83.3%)	1 (100.0%)	1 (20.0%)	8 (47.1%)	6 (60.0%)	6 (37.5%)	1 (100.0%)	64 (64.0%)		
Total	32 (100.0%)	18 (100.0%)	1 (100.0%)	5 (100.0%)	17 (100.0%)	10 (100.0%)	16 (100.0%)	1 (100.0%)	100 (100.0%)		

Table 5: Association Of Type Of Congenital Anomaly And Status Of The Baby

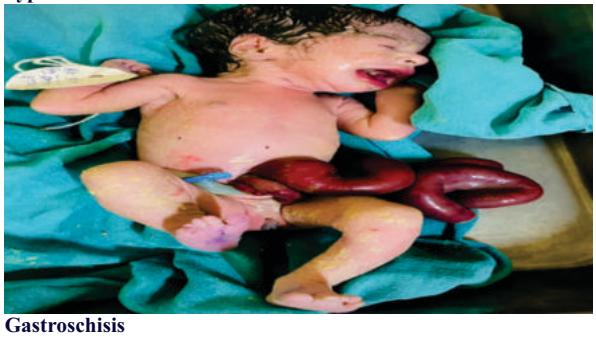
Status of the baby	Congenital Anomaly Type (n=100)									Fisher's Exact Test	
	CNS	Renal	Chromosomal	Respiratory system	Musculoskeletal	CVS	Gastrointestinal	Multiple Systems	Total	χ2	P Value
Alive	21 (65.6%)	18 (100.0%)	1 (100.0%)	5 (100.0%)	17 (100.0%)	10 (100.0%)	14 (87.5%)	0 (0.0%)	86 (86.0%)	25.509	<0.001
Still Birth	11 (34.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (12.5%)	1 (100.0%)	14 (14.0%)		
Total	32 (100.0%)	18 (100.0%)	1 (100.0%)	5 (100.0%)	17 (100.0%)	10 (100.0%)	16 (100.0%)	1 (100.0%)	100 (100.0%)		

Table 6. Distribution Of Type Of Congenital Anomalies

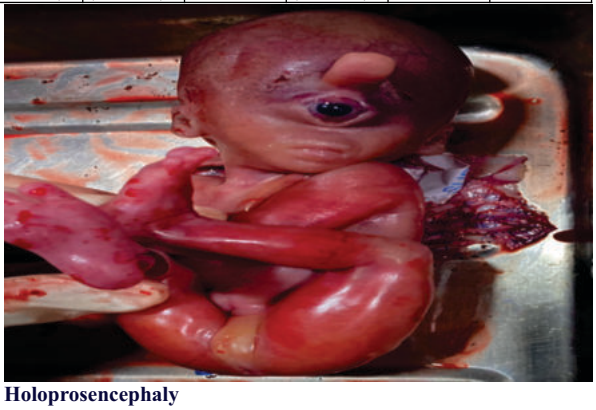
Congenital Anomaly Type	Frequency	Percentage	95% CI
CNS	32	32.0%	23.2% - 42.2%
Renal	18	18.0%	11.3% - 27.2%
Chromosomal	1	1.0%	0.1% - 6.2%
Respiratory system	5	5.0%	1.9% - 11.8%
MSS	17	17.0%	10.5% - 26.1%
CVS	10	10.0%	5.2% - 18.0%
GI	16	16.0%	9.7% - 25.0%
Multiple Systems	1	1.0%	0.1% - 6.2%



Pentalogy of Cantrell (Omphalocele with ectopia cordis with kyphoscoliosis



Gastroschisis



Holoprosencephaly

DISCUSSION

This study was done to describe the type and pattern of structural congenital anomalies among new born and their associated factors and to determine the prevalent types and pattern of congenital anomalies among new borns. As per table no.1 majority of congenital anomalies were seen in babies born to the age group of mothers 26-30 yrs of age (43%) followed by 18-25 yrs of age(37%). But the results were statistically insignificant. This may be because as age advances the quality of oocyte decreases. This is similar to the study by Yadav Vijay and Sharma Rakesh (2016)[3] et al , Jayalakshmi Prabbati and Preethi Subramanian (2016)[4] et al and Amar Taskande and Krishna Vilhekar et al (2010)[5] had similar results. As per table no. 2 Congenital anomalies were seen in babies who were born to mothers who had non consanguineous marriage (80%) compared to babies born to mothers who had consanguineous marriage (20%). But the results were statistically insignificant.This may be because mothers with consanguineous marriage were aware about the consequences. Setu Rathod and Sunil Kumar Samal (2020)[6] and Rizk Francine and Salameh Pascale (2014)[7] had similar results. As per table no. 3 congenital anomalies were seen in majority of multiparous mothers (50%) followed by nulliparous mothers (28%) and primiparous mothers (22%). But the results were statistically insignificant. This may be because of the advancing age in multipara mothers. Setu Rathod and Sunil Kumar Samal (2020)[6] had similar results As per table no. 4 female babies were higher in congenital anomalies (64%) as compared to male babies (36%). The results were statistically significant. Sandeep Sachdeva and Smiti Nanda (2014)[8] had similar results. As per table no. 5 maximum of congenitally malformed babies were born alive (86%) as compared to still born (14%). The results

were statistically significant. Jayalakshmi Prabatti and Preethi Subramanian (2016)[4] had similar results. In present study majority of congenital anomalies involved CNS followed by renal system, musculoskeletal system and GI system . B. B. Yadav and S.B. Yadav (2018)[9] and Setu Rathod and Sunil Kumar Samal (2020)[6] had similar study. As per table no. 6 maximum number of congenital anomalies involved Central Nervous System (32%) followed by renal system (18%) and musculoskeletal system anomalies (17%).

CONCLUSION

In present study it has been seen that the most of the congenital anomalies were found in the age group of 26-30 years of age, multipara and among muslim mothers . There is need for maternal education and offering genetic counselling to the eligible couples. Early detection of congenital anomalies through Targeted scans is of great importance as the majority of anomalies are detected on ultrasonography to reduce the burden associated with the congenital anomalies. Maternal education and family planning play a very important role in the prevention of congenital anomalies. Since most of the mothers were uneducated, there is a need to educate them regarding the importance of antenatal checkups and ultrasonography. The congenital anomalies contribute to the major share of neonatal morbidity and mortality, early detection of the congenital abnormality by Ultrasonography plays a crucial role. Genetic counselling at different periods help in the reduction of incidence and prevalence of the congenital anomalies.

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