

A Single Centre Retrospective Study to Assess the Frequency of Congenital Anomalies in a Tertiary Care Hospital

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Abstract

Objectives: The objective of our study was to determine the frequency and types of congenital fetal anomalies among pregnant patient in tertiary care hospital.

Methodology: This is descriptive, cross sectional retrospective study conducted in obstetrics and gynecology and radiology department of HBS General hospital Islamabad from January 2021 to January 2023. It includes all booked and unbooked antenatal patients

Results: Over a period of two years total 3723 antenatal patients included in our study out of which 2.01% were diagnosed with congenitally structurally malformed fetuses. Commonly observed congenital abnormality in our study was CNS anomaly which was observed in 26 patients followed by congenital cardiac defects (16 patients), renal abnormality in 8 patients, and skeletal anomalies in 6 patients and respiratory tract anomalies in 2 patients.

Conclusion: Congenital anomalies are a major cause of stillbirth and infant mortality. Patients history of medical disorders, previous anomalous baby, consanguinity, advanced maternal age and drug history have strong association with congenital fetal anomalies.

Key words: (Pregnant women, second trimester, antenatal, anomaly scan.

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Introduction

Congenital anomalies are normally considered as structural and functional anomalies¹, which were further classified as major and minor congenital anomalies. Due to recent advances antenatal care and medical technology lot of improvement is seen in detection of congenital anomalies in 3rd world countries.

Anomaly scan during second trimester of pregnancy has been commonly practiced in our health care settings. Every pregnant woman is advised second trimester USG between 18- 22 weeks from sonologist.³ Anomalous babies are of great concern for health care professional² and is a source of psychological trauma for parents.

WHO fact sheet 2016 showed 303,000 neonatal deaths occurs every year due to congenital anomalies.⁴

In European countries different studies conducted showed increasing incidence of congenital heart disease and decreasing trends in limb defects². In Pakistan mostly studies showed increasing incidence and NTD⁵⁻¹² with prevalence ranging for 1.4% to 7%.

Cousin marriages, increase in maternal age, folic acid deficiency, diabetes, thyroid disorders are also considered as risk factor associated with congenital anomalies.^{13,14,15,16,17,18,19}

The purpose of our study is to determine frequency of congenital anomalies among general population during 2nd trimester USG. Although number of studies done on it but lot more work is required in this aspect.

Methodology

This study was conducted on pregnant patients of OPD and IPD of gynae department of HBS general hospital

Islamabad in collaboration with radiology department over period of 2 years. This was retrospective study, data was retrieved from the computer. All patients with gestational age of more than 20 weeks were included in the study. Detailed history of all the patients including maternal age, parity, gestational age, consanguineous marriage and family history of anomalous baby was also taken. USG machine Aloka IPFI701B of 3.5Mtlz multifrequency curvilinear transducer was used, allocated time was 30 minutes. Associated comorbidities were not considered in our study as it was retrospective.

Ethical approval was taken from internal review board of HBS medical and dental college Islamabad. Informed consent was taken from all the patients included in our study as per our hospital policy. According to the results of USG we fully inform our patient regarding type of anomaly and its prognosis.

Results

Over a period of 2 years, number of pregnant patients included were 3732, out of which 2.01% were diagnoses with congenital anomalies, commonest abnormality which was observed in our study was central nervous system (CNS) anomalies and is observed in 26 patients. Among CNS anomalies anencephaly was most common and hydrocephalus was second most common. (Table I)

Second commonly identified birth defect were cardiac anomalies in which we had VSD in 6 patients and cardiomegaly and septal wall defects in rest of the patients. Cardiac anomalies were identified in 16 patients. We entered rest of the anomalies in miscellaneous group which includes skeletal anomalies in 6 patients, renal anomalies in 8 patients and tracheal atresia in 2 patients. Most of the pregnant patients with congenital anomalies were of 25 – 30 weeks. Out of all 94 patients has first cousin marriage.

Type of anomaly	Numbers	%
CNS	27	
Anencephaly	11	15
Hydrocephaly	09	12
Others	07	09
CVS	16	
VSD	06	08
Cardiomegaly and septal wall defects	10	13
Miscellaneous	32	
Skeletal	06	08
Renal	08	11
Tracheal atresia	02	03
Others	16	21
Total number (%)	75	

Discussion

In our study, frequency of congenital abnormalities was about 2.01% which is quite comparable with other studies done in our part of the world^{13,20}. Same results were found in two other international studies conducted in Brazil by Al media et al, which showed prevalence of about 2.4%. Second study conducted in Europe by Mohammed A et al, which showed prevalence of 2.5%^{16,21} Another study conducted in India by Sarkar S et al, which showed incidence of 2.2%.¹⁷

Most congenital anomalies identified in our study were between 20-30 weeks of pregnancy although ideal time is between 18-22 weeks when most of the structural anomalies were identified. Association between cousin marriages and congenital anomalies is evident in many studies^{11,12} which is also seen in our study.

Most of the studies correlate congenital anomalies with established diabetes and GDM and with gender of fetus which is not considered in our study^{12,17}. These studies showed 7.5% patients have anomalous fetus along with gestational diabetes mellitus (GDM) and among gender of fetuses, congenital anomalies were more frequent in male fetuses.

CNS anomalies were commonest in our study which was followed by cardiac anomalies. The results of our study are almost similar to studies conducted in Pakistan² and other neighboring countries^{8,11,12,22}. The most common CNS anomaly found in our study was anencephaly followed by hydrocephalies and meningocele. Our local studies done previously support our results of CNS anomalies being commonest^{8,9,12}

Results of our study is comparable with previously done national and international studies, but in our study, consanguinity was the only comparable factor.

As it's a retrospective study so other associated risk factors were not compared which should be considered in future.

Conclusion

Congenital anomalies are a major cause of stillbirth and infant mortality. Patients history of medical disorders, previous anomalous baby, consanguinity, advanced maternal age and drug history have strong association with congenital fetal anomalies.

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Authors Contribution:

^{1,2} Substantial contributions to the conception or design of the work;

^{2,3,4} The acquisition, analysis, or interpretation of data for the work;

¹ Final approval of the version to be published;

^{1,5,6} Drafting the work or revising it critically for important intellectual content.