**ORIGINAL RESEARCH**

# Congenital anomalies in second and third trimester

[1]Dr. Grishma Agrawal, [2]Dr. Prashant Agrawal

[1]Assistant Professor, MBBS MS Gyneac FMAS and Infertility specialist Gold Medalist LNCTMC, Indore
[2]Assistant Professor, in Pediatrics SAIMS INDORE,MBBS MD (PEDIATRICS) FNB (PEDIATRIC CARDIOLOGY)

**Corresponding author**
Dr. Prashant Agrawal
Assistant professor, in Pediatrics SAIMS INDORE,MBBS MD (PEDIATRICS) FNB (PEDIATRIC CARDIOLOGY)

Received: 12 June, 2023 Accepted: 3 July, 2023

## ABSTRACT

**Background:** Congenital anomaly (CA) is the structural or functional anomaly that occurs during intrauterine life and can be identified prenatally, at birth or later in life. The present study was conducted to assess congenital anomalies in second and third trimester.

**Materials & Methods:** 58 congenital anomalies of both genders. Parameters such as the mother's age, parity, gestational age, delivery method, fetal outcome etc. was recorded. Significant prenatal history was noted, including maternal sickness, drug use, radiation exposure, and labor problems.

**Results:** Out of 58 patients, males were 38 and females were 20. Live fetus at scanning was observed in 23 cases and IUD fetus at scanning in 35 cases. The difference was significant (P< 0.05). Congenital anomalies were anencephaly in 14, hydrocephalous in 8, all heart chambers dilated in 2, pericardial effusion in 5, holoprosencephaly in 3, encephalocoele in 6, congenital cataract in 7, cleft lip and palate in 10 and down syndrome in 3 cases. The difference was significant (P< 0.05).

**Conclusion:** Authors found that in the hands of a skilled practitioner, antenatal ultrasonography is a non-invasive imaging technology that is very sensitive, accurate, and cost-effective. Pregnant women should get thorough ultrasound screening, especially in the second trimester, and follow-up abnormality scanning. This recognizes hereditary conditions and congenital deformities as well as morphological and functional problems in the growing fetus.

**Key words:** Congenital anomalies, Pregnant women, ultrasonography



## INTRODUCTION

Congenital anomaly (CA) is the structural or functional anomaly that occurs during intrauterine life and can be identified prenatally, at birth or later in life.[1] These defects of prenatal origin result from defective embryogenesis or intrinsic abnormalities in the development process.[2] Based on the World Health Organization report, about 3 million foetuses and infants are born and 276000 babies die within 4 weeks of birth every year, worldwide, from congenital anomalies. Worldwide surveys have shown that birth prevalence of congenital anomalies varies greatly from country to country.[3] Congenital abnormalities can now be detected early because of advancements in screening and diagnostic procedures. This gives obstetricians and perineonatologists the ability to counsel patients on continuing or terminating their pregnancies and to choose the day, time, and location of deliveries. It also makes it possible to determine whether postpartum interventions, including surgery, are necessary.[4] If fetal therapy is available and the condition is detected early enough, it can be used as an alternative to pregnancy termination. The best time to perform a prenatal ultrasound to accurately identify a fetus is between 18 and 20 weeks of pregnancy.[5] At this point, it is possible to identify about 70% of significant anomalies and 45% of minor anomalies. Additionally, it is around this time that a pregnancy can be precisely dated using the 10-week rule.[6] The present study was conducted to assess congenital anomalies in second and third trimester.

## MATERIALS & METHODS

The present study consisted of 58 congenital anomalies of both genders. Patients consent was obtained before participating in the study. Data such as name, age, gender etc. was recorded. Documentation was made of the mother's age, parity, gestational age, delivery method, fetal outcome, and folic acid intake. Significant prenatal history was noted, including maternal sickness, drug use, radiation exposure, and labor problems. If the patient

underwent a prenatal ultrasound (USG) scan, the results were recorded. Soon after birth, congenital abnormalities were checked in all the infants and terminated fetuses. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

## RESULTS

**Table: I Distribution of patients**

| Total- 58 | | |
|---|---|---|
| **Gender** | **Male** | **Female** |
| Number | 38 | 20 |

Table: I shows that out of 58 patients, males were 38 and females were 20.

**Table: II USG of anomaly**

| USG | Number | P value |
|---|---|---|
| Live fetus at scanning | 23 | 0.04 |
| IUD fetus at scanning | 35 | |

Table: II, graph I shows that live fetus at scanning was observed in 23 cases and IUD fetus at scanning in 35 cases. The difference was significant (P< 0.05).

**Graph: I USG of anomaly**

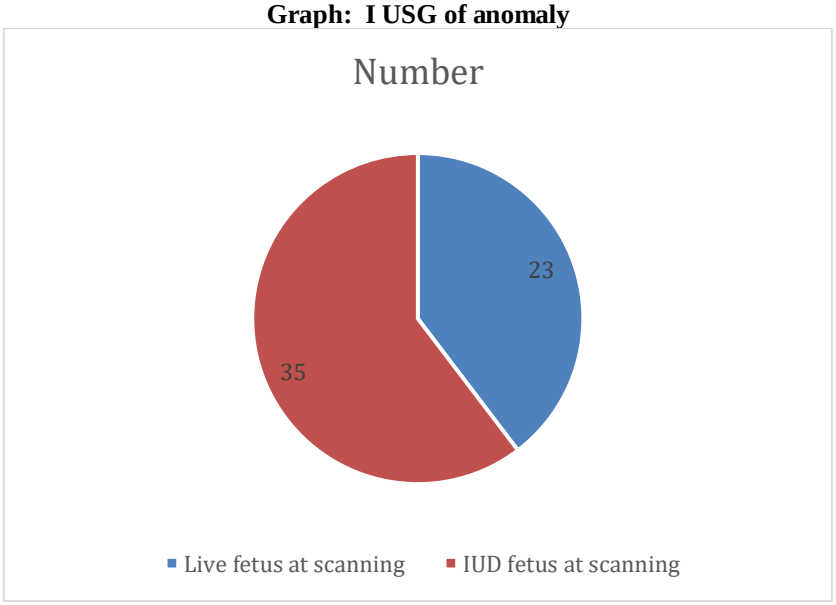
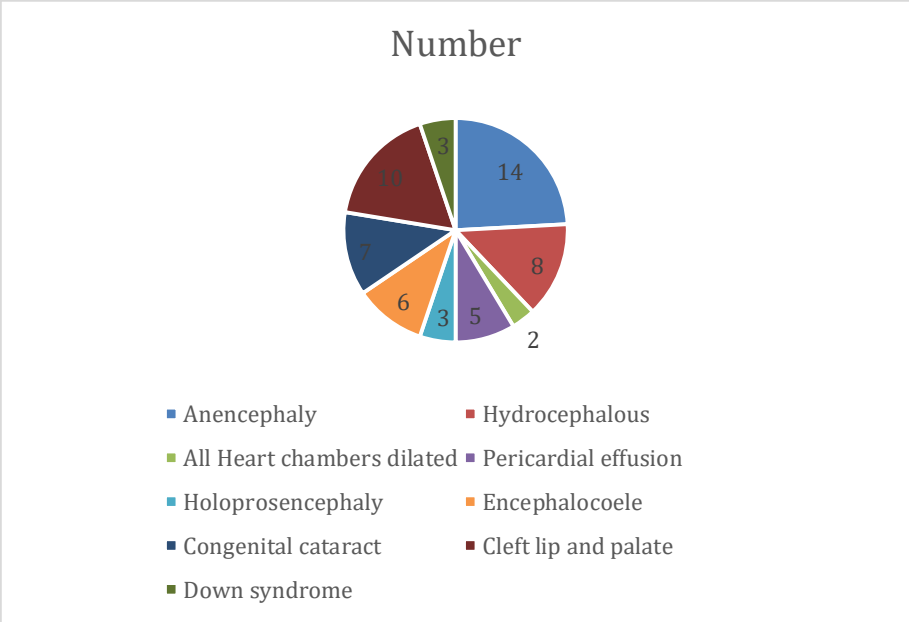



**Table: III Different congenital anomalies**

| Congenital anomalies | Number | P value |
|---|---|---|
| Anencephaly | 14 | 0.05 |
| Hydrocephalous | 8 | |
| All Heart chambers dilated | 2 | |
| Pericardial effusion | 5 | |
| Holoprosencephaly | 3 | |
| Encephalocoele | 6 | |
| Congenital cataract | 7 | |
| Cleft lip and palate | 10 | |
| Down syndrome | 3 | |

Table : III, graph II shows that congenital anomalies were anencephaly in 14, hydrocephalous in 8, all heart chambers dilated in 2, pericardial effusion in 5, holoprosencephaly in 3, encephalocoele in 6, congenital cataract in 7, cleft lip and palate in 10 and down syndrome in 3 cases. The difference was significant (P< 0.05).

**Graph: I Different congenital anomalies**




## DISCUSSION

Advanced diagnostic technology, especially USG, has made it possible to detect increased number of birth defects in infants antenatally and during the neonatal period.[7,8] Advanced diagnostic technology, especially Ultrasonography (Level 11), has made it possible to detect increased number of birth defects in infants antenatally and during the neonatal period.[9,10] The present study was conducted to assess congenital anomalies in second and third trimester. We found that out of 58 patients, males were 38 and females were 20. Mahela et al[11] in their study total 2650 numbers of 2nd and 3rd trimester prenatal ultrasonography (USG) were done. Out of these 45 numbers of congenital anomalies were detected. The antenatal prevalence of congenital anomalies was 1.73%. The mean maternal age and mean gestational age at diagnosis was 25.5 years (SD ± 6.15) and 27 weeks (SD±6.42) respectively. Central nervous system (CNS) defect was the commonest (42%), of which maximum number had anencephaly defect i.e. 8 (17.78%) cases We found that live fetus at scanning was observed in 23 cases and IUD fetus at scanning in 35 cases. Madan et al[12] evaluated the antenatal incidence of major congenital abnormalities and its pattern of distribution. Out of total 1162 live /still birth, 20 feti were found to have congenital malformations. The overall incidence being 1.72% (17.2 per 1000 births). Commonest anomalies were of Central Nervous System followed by other systems. We found that congenital anomalies were anencephaly in 14, hydrocephalous in 8, all heart chambers dilated in 2, pericardial effusion in 5, holoprosencephaly in 3, encephalocoele in 6, congenital cataract in 7, cleft lip and palate in 10 and down syndrome in 3 cases. Alakanada et al[13] determined the prevalence of congenital anomaly, types of anomaly and associated risk factor if any. Prevalence of fetal congenital anomaly was 0.7%. Out of 96 cases only 15 cases (15.6%) were detected at 2nd trimester. Central Nervous System (CNS) deformity was the commonest defect observed with 41cases (42.7 %) out of which maximum cases (38) had neural tube defect. Anomalies were found more in younger age group, in primi gravida and in women with anemia and in low socio economic group. Various risk factors were associated in 7 numbers of cases out of 96. The limitation of the study is small sample size.

## CONCLUSION

Authors found that in the hands of a skilled practitioner, antenatal ultrasonography is a non-invasive imaging technology that is very sensitive, accurate, and cost-effective. Pregnant women should get thorough ultrasound screening, especially in the second trimester, and follow up abnormality scanning. This recognizes hereditary conditions and congenital deformities as well as morphological and functional problems in the growing fetus.

## REFERENCES

1. Souka AP, Pilalis A, Kavalakis I. Screening for major structural abnormalities at the 11- to 14-week ultrasound scan. American Journal of Obstetrics and Gynecology. 2006;194(2):393–6.
2. Sallout BI, Al-Hashan MS, Attyyaa RA. Antenatal diagnosis, prevalence and outcome of major congenital anomalies in Saudi Arabia: a hospital based study. Ann Saudi Med. 2008;28(4):272-6.
3. Alia N, Ahmed I. Congenital anomalies: prevalence of abnormalities in 2nd trimester of pregnancy in Madina teaching hospital, Faisalabad on grey scale ultrasound. JUMDC. 2010;1(1):23-8.
4. Dolk H, Loane M, Garne E. The prevalence of congenital anomalies in Europe. Adv Exp Med Biol. 2010;686:349-64.

5. Shah K, Pensi CA. Study of incidence of congenital anomalies in newborn. Gujrat Medical Journal. 2013;68(2):97-9.
6. Taboo ZAA. Prevalence and risk factors for congenital anomalies in Mosul city. The Iraqi Postgraduate Medical Journal. 2012; 11(40): 458-70.
7. Patel ZM, Adhia RA. Birth defects surveillance study, year 2005. Indian J. Pediatr. 2005;72(6):489- 91.
8. Boyd PA, Armstrong B, Dolk H, Botting B, Pattenden S, Abramsky L. Congenital anomaly surveillance in Englandascertainment deficiencies in the national system. BMJ. 2005;330(7481):27-31.
9. Temtamy S. A genetic epidemiological study of malformations at birth in Egypt. Eastern Mediterranean Health journal. 1998;4:252-9.
10. Biri A. Birth prevalence and distribution of congenital anomalies in a university hospital. PerinatolDergisi. 2005;13:86-90. 7. Lin AE. Cardiovascular malformations: changes in prevalence and birth status, 1972-1990. American journal of medical genetics. 1999;84:102-10
11. Mahela S, Talukdar B. Prevalence of congenital abnormalities on routine ultrasound scan of second and third trimester pregnancy. Int J Reprod Contracept Obstet Gynecol 2016;5:182-5.
12. Madan A, Pal D, Aggarwal T, Kaur P. Congenital Anomalies in Second and Third Trimester- An Enigma. J Adv Med Dent Scie Res 2019;7(7): 131-135.
13. Alakananda, Choudhury SS, Neiting C. A study on prevalence of congenital anomalies of foetuses among pregnant women in a tertiary care hospital and its association with socio-demographic factors. The New Indian Journal of OBGYN. 2015;2(1):46- 50.