

ORIGINAL RESEARCH

To estimate the prevalence, pattern, risk factors, distribution of various congenital malformations and to compare various methods of pregnancy termination

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Received: 07 April, 2023

Accepted: 10 May, 2023

ABSTRACT

Background: Estimation of prevalence, pattern, risk factors, distribution of various congenital malformations and to compare various methods of pregnancy termination. **Materials & methods:** A total of 500 subjects were enrolled. Complete demographic and clinical details of all the subjects was recorded. Inclusion criteria for the present study included Antenatal women with congenital anomalies to the foetus registered or referred to department of OBG. Collection of data was done which included age, parity, gestational age, consanguinity, recurrent abortions, maternal infections, folic acid intake, obesity, history of previous anomalies, family history of congenital anomalies, any medical disorders such as diabetes, thyroid diseases. All the results were recorded in Microsoft excel sheet followed by statistical analysis. **Results:** Overall, congenital malformation was present in 2.2 percent of the cases. Majority of the malformations were detected in second trimester. BMI more than 25 Kg/m², Overt diabetes, Gestational DM, Thyroid dysfunction, Family history of congenital malformation and History of maternal infection were the risk factors seen in 90.91 percent, 27.27 percent, 18.18 percent, 45.45 percent, 36.36 percent and 27.27 percent of the patients. Methods of termination among cases with presence of congenital malformation was Medical (Mifepristone + Misoprostol), Mifepristone alone, Misoprostol alone, Hysterotomy and Mechanical dilatation with Foley's Catheter in 54.55 percent, 9.09 percent, 9.09 percent, 18.18 percent and 9.09 percent of the patients respectively. **Conclusion:** Morbidity due to congenital anomalies can be minimised but not totally preventable by early diagnosis.

Key words: Pregnancy, Termination, Congenital

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INTRODUCTION

The Global Burden of Disease study 2013 identified congenital anomalies among the top ten causes of mortality in children less than five years of age. While congenital anomalies are the leading cause of death in children in this age group in the high-income countries, they are not considered to be significant public health problems in low- and middle-income countries (LMICs).^{1,2} The key reasons for this public health under-prioritization in LMICs relate to the inherent characteristics of these conditions. They are low in prevalence, their proportionate contribution to mortality is significantly lower as compared to other perinatal causes, infections and malnutrition, and their management is resource intensive.^{3,4}

As per the more recent WHO fact-sheet of October 2012, congenital anomalies can be defined as structural or functional anomalies, including metabolic disorders, which are present at the time of birth. Congenital anomalies are an important 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 loss, but also contributes significantly to preterm birth, childhood and adult morbidity along with considerable repercussion on the mothers and their families.⁵⁻⁷ Hence; the present study was conducted for estimating the prevalence, pattern, risk factors, distribution of various congenital malformations and to compare various methods of pregnancy termination.

MATERIALS & METHODS

The present study was conducted for estimating the prevalence, pattern, risk factors, distribution of various congenital malformations and to compare various methods of pregnancy termination. A total of 500 subjects were enrolled. Complete demographic and clinical details of all the subjects was recorded. Inclusion criteria for the present study included Antenatal women with congenital anomalies to the foetus registered or referred to department of OBG. Collection of data was done which included age, parity, gestational age, consanguinity, recurrent abortions, maternal infections, folic acid intake, obesity, history of previous anomalies, family history of congenital anomalies, any medical disorders such as diabetes, thyroid diseases. All the results were recorded in Microsoft excel sheet followed by statistical analysis.

RESULTS

A total of 500 subjects were enrolled. Mean age of the subjects was 28.3 years. Majority of the subjects were of Multigravida (56.4 percent). Gender of the fetus was female in majority of the cases. Overall, congenital malformation was present in 2.2 percent of the cases. Majority of the malformations were detected in second trimester. BMI more than 25 Kg/m², Overt diabetes, Gestational DM, Thyroid dysfunction, Family history of congenital malformation and History of maternal infection were the risk factors seen in 90.91 percent, 27.27 percent, 18.18 percent, 45.45 percent, 36.36 percent and 27.27 percent of the patients. Methods of termination among cases with presence of congenital malformation was Medical (Mifepristone + Misoprostol), Mifepristone alone, Misoprostol alone, Hysterotomy and Mechanical dilatation with Foley's Catheter in 54.55 percent, 9.09 percent, 9.09 percent, 18.18 percent and 9.09 percent of the patients respectively.

Table 1: Prevalence of congenital malformations

Congenital malformation	Number	Percentage
Present	11	2.2
Absent	489	97.8
Total	500	100

Table 2: Risk factors among cases with presence of congenital malformation

Risk factors	Number	Percentage
BMI more than 25 Kg/m ²	10	90.91
Overt diabetes	3	27.27
Gestational DM	2	18.18
Thyroid dysfunction	5	45.45
Family history of congenital malformation	4	36.36
History of maternal infection	3	27.27

Table 3: Methods of termination among cases with presence of congenital malformation

Methods of termination	Number	Percentage
Medical (Mifepristone + Misoprostol)	6	54.55
Mifepristone alone	1	9.09
Misoprostol alone	1	9.09
Hysterotomy	2	18.18
Mechanical dilatation with Foley's Catheter	1	9.09

DISCUSSION

Congenital anomalies, also known as birth defects, include structural or functional anomalies of prenatal origin, resulting from an abnormality or defect that occurs during the development process. Congenital anomalies accounted for 510,400 deaths worldwide in 2010, according to the Global Burden of Disease Study. The prevalence of congenital anomalies at birth varies greatly worldwide, ranging from 1.07% in Japan to 4.3% in Taiwan. Such a high variation in prevalence could be related to social, racial, ecological, and economic influences. The prevalence rates of congenital anomalies recorded in developing countries are likely to be underestimated due to unavailability of diagnostic capabilities or accurate medical records, as well as underreporting.⁹⁻¹¹

The existence of long-standing congenital anomaly registries has the advantage that high-quality population-based data on birth prevalence and pregnancy outcomes are readily available in settings with rigorous surveillance programmes, which provide information on congenital malformations. However, not all countries have yet established robust surveillance systems and, for these countries, methods are needed to generate estimates of prevalence of these disorders which can act as a starting point for assessing disease burden and service implication.^{10, 11} Hence; the present study was conducted for estimating the prevalence, pattern, risk factors, distribution of various congenital malformations and to compare various methods of pregnancy termination.

In a similar study conducted by Gedamu S et al, authors assessed congenital anomalies and their associated factors among newborns. Out of 2,218 live births, 23 newborns were diagnosed with congenital malformations, making the prevalence rate of 1%. Maternal age above 35 years, birth order above 3, birth weight less than 2.5 kg, and singleton pregnancy had a significant association with the incident of congenital anomalies, while iron folate use before and/or during early pregnancy and urban residence had a protective effect against congenital anomalies.¹² Janet Adetunke Akinmoladun et al, in another previous study, determined the prevalence and pattern of congenital anomalies among high risk pregnant women. A total of 418 high risk pregnant women underwent detailed fetal anomaly scan and CAs were detected in 13(3.1%) of them. Spontaneous abortion was the most common maternal risk factor reported although the association between it and congenital anomaly was not significant. The highest number of anomalies were detected in the genitourinary system while the least was in the central nervous system.¹³

In another previous study conducted by Prathyusha IN et al, authors estimated the prevalence, patterns, risk factors, distribution of various congenital malformations. Out of 6400 deliveries, 100 cases of major congenital anomalies were noted, making a prevalence of 1.56%. CNS anomalies were most commonly reported. Most of the cases were reported in 2nd trimester. Most common method of termination was medical, using Mifepristone and Misoprostol.¹⁴ Bhide P et al, in another study, evaluated the prevalence of Congenital Anomalies in an Indian Maternal Cohort. Among 1822 births, the total prevalence of major congenital anomalies was 230.51 per 10 000 births. Congenital heart defects were the most commonly reported anomalies in the cohort with a prevalence of 65.86 per 10 000 births. Although neural tube defects were two and a half times less as compared to congenital heart defects, they were nevertheless significant at a prevalence of 27.44 per 10 000 births. In this cohort, congenital anomalies were the second largest cause of neonatal deaths. The congenital anomaly prenatal diagnosis prevalence was 10.98 per 1000 births and the congenital anomaly termination of pregnancy rate was 4.39 per 1000 births.¹⁵

CONCLUSION

Morbidity due to congenital anomalies can be minimised but not totally preventable by early diagnosis.

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