Research Article



Pattern of Prevalence of Congenital Anomalies and its Association with Risk Factors -A Retrospective Study

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ABSTRACT

Congenital anomalies are defined as structural or functional defects that occur during intrauterine life and can be identified prenatally, at birth, or sometimes may only be detected later in infancy. Recently, there is a trend towards increase in proportion of perinatal deaths due to congenital malformations. Hence the study was conducted in for proper understanding about the prevalence, pattern and risk factors. The research was carried out retrospectively. Required details-parity, age, co morbid conditions, antenatal history, USG findings, sex of baby and type of anomaly were collected from the Parturition and birth anomalies register. Finally simple proportions were calculated and the data was analyzed statistically. In this study, prevalence of congenital anomalies were more common among young Primi (43.75%) without any risk factors such as any co morbid conditions and 75% of the antenatal mothers who delivered in SMCH during study period were booked and immunized. Also 69% of them consumed folic acid with compliance but still gave birth to anomalous child. Central Nervous System anomalies were the highest (37.50%) among all congenital anomalies found. This study reveals that the risk of congenital anomalies is significant not only in elderly mothers but also in primiparity. Even in the evidence of proper antenatal care and absence of risk factors, congenital anomalies appearing sporadically are on the rise. This drives the need for awareness about prenatal folic acid consumption, prenatal genetics, diagnosis of anomalies and efficient counseling.

Keywords: Congenital malformations, perinatal death, prenatal genetics, Risk factors.

INTRODUCTION

ongenital anomalies are defined as structural defects, chromosomal abnormalities, inborn errors of metabolism and hereditary disease, diagnosed before, at, or after birth. ¹ It is defined as structural or functional anomalies that occur during intrauterine life and can be identified prenatally, at birth, or sometimes may only be detected later in infancy. However, the pattern and prevalence of congenital anomalies may vary over time or with geographical location.²

Congenital anomalies account for 8-15% of perinatal deaths and 13-16% of neonatal deaths in India.^{3,4} In developing countries like India, the leading causes of infant morbidity and mortality are malnutrition and infections, whereas in developed countries they are cancer, accidents and congenital malformations. Recently, there is a trend towards increasing in the proportion of perinatal deaths due to congenital malformations in comparison to other causes, because of the improvement in perinatal and neonatal care. This clearly states that in the upcoming years leading cause of morbidity and mortality would be the centers that provide the good neonatal care.

Proper knowledge about risk factors and prevention of congenital malformations in pregnant women can lead to primary prevention of disease. ⁵ Although approximately 50% of all congenital anomalies cannot be linked to a specific case, there are some known genetic and

environmental factors. Others include socioeconomic and demographic factors and maternal infections.

Hence, this study was conducted in order to determine the overall rate of congenital malformations, incidence in live births and stillbirths, as well as incidence affecting various organ systems, at Saveetha Medical College & Hospital, Thandalam and compare them to previous studies. Also the study emphasizes the need of introducing preconception counseling and prenatal diagnostic methods in various health sectors.

METHODS

Study design - Retrospective study design

Sample Size - 420

Inclusion criteria

1) Antenatal women of all age group who delivered at SMCH.

2) Deliveries conducted during the period of Jan2016-Jan2017.

3) Birth conducted through any method –normal labour or Caesarean section

Exclusion criteria

1) Newborns delivered elsewhere and brought to SMCH.



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METHODOLOGY

The data was collected retrospectively from case record-Parturition and Anomalies Register of Saveetha Medical College and Hospitals. The record consisted data about mothers who delivered at Saveetha Medical College and Hospitals within the period of Jan2016-Jan 2017. In total 420 cases were analyzed.

RESULTS



Statistical Analysis

Simple proportions and percentages were calculated as the method of analysis of data and graphs were plotted for comparison.



Figure 1: Pattern of Congenital anomalies



Figure 2: Percentage of Booked and Unbooked antenatal mothers



ALIVE DEAD

Figure 3: Outcome of pregnancy: Live or Dead fetus



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Figure 5: Status of regular folic acid intake



DONE NOT DONE





Figure 7: Evidence of anomalies in Ultrasound

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Figure 8: Order of Parity



Figure 9: Consanguinity of marriage

DISCUSSION

In our study prevalence of congenital anomaly was 3.25%. Study conducted by Alkananda et al shows low prevalence of congenital abnormalities of about 0.7%.⁶, whereas Marden et al $(2-4\%)^7$, Verma IC et al $(3.6\%)^8$ show similar findings. We found the most prevalent anomaly to be Central Nervous system anomaly (Fig. 1) and similar findings were found by Tella sunitha et al ⁹ and Deepika deka et al ¹⁰. Majority (75%) of cases were booked (Fig. 2).

Also most (56.20%) of the anomalous babies were born dead [Fig.3].

We found anomalies were more common among male foetuses (56.20%)(Fig. 4). Similarly in a study conducted by Mohanty et al¹¹, congenital defects were more common in males. Among all the antenatal mothers 69% of them consumed folic acid tablets (Fig. 5). 96% of the antenatal mothers presented for ultrasound (Fig. 6) and anomalies detected by ultrasonogram were 49% in our study (Fig. 7). This was similar to most of the other studies. Anomalies were more common among the age group of 21-30 years (62.5%) and perveen et al ¹² also reported almost the same (55.26%). In our study, anomalies were found to be high among primi (43.75%)(Fig. 8.) Our study reports showed that were anomalies more common among nonconsanguineous marriage (87.50%) but in contrary Tayebi et al¹³ showed consanguinity as a significant cause of congenital anomalies (Fig. 9)

CONCLUSION

Congenital anomalies were more common among young Primi (Non-Consanguineous marriage) without any risk. Of which, CNS anomalies were on rise. Since congenital anomalies are seen sporadically without risk factors. Therefore, awareness about prenatal folic acid, preconception counseling, Prenatal diagnostics are strongly recommended.

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