Research Article

Study of congenital anomalies of fetus and its outcome in a tertiary care centre

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ABSTRACT

Background: According to WHO Congenital anomalies are defined as structural or functional anomalies, including metabolic disorders which are present at the time of birth. Congenital anomalies are a major health problem accounting for 8% to 15% of perinatal deaths and 13% to 16% of neonatal deaths in India. This study was done to know the frequency, pattern of congenital anomalies and various presentations, which may help to develop strategies for patient counseling and management. The objective of study was to present the spectrum of various congenital anomalies, epidemiological features of pregnant women with anomalous fetus.
Methods: Retrospective, analytical hospital based study of 45 patients who delivered or aborted congenital anomalous baby from a period of 1st Jan 2012 to 31st August 2015. Relevant information regarding maternal age, parity, gestational age, birth weight, sex, and consanguinity antenatal ultrasound was documented.
Results: During the study period 45 congenital anomalies were seen in delivered babies and aborted fetus, 32 (71%) patients were in the age group of 20-29 years. 35 (77%) patients were from rural area and 29 (65%)were unbooked patients. The incidence of congenital malformations was higher among abortions and preterm deliveries. Incidence of congenital anomalies was higher in stillborn. 31 (68%) patients had anomalies diagnosed on antenatal ultrasound. Central nervous system was the most common system involved followed by musculoskeletal system. Anencephaly was the common malformation seen in 12 (27%) patients.
Conclusions: Our study concluded that number of congenital anomalies were more in rural patients and were higher in stillborn. Central nervous system was commonly involved. Early diagnosis, antenatal ultrasonography, proper counseling for this pregnancy and subsequent pregnancy in needed for proper management of the problem.

Keywords: Congenital malformations, New-born, Still born, antenatal ultrasound, Central nervous system

INTRODUCTION

Congenital anomalies are a major health problem and are responsible for a remarkable proportion of mortality and morbidity in newborns. It affects 3-5% of live births in the United States, in India the reported incidence is 2.5%. Congenital anomalies account for 8% to 15% of perinatal deaths and 13% to 16% of neonatal deaths in India.[1] According to WHO Congenital anomalies are defined as structural or functional anomalies, including metabolic disorders which are present at the time of birth.[2]

Around 40%- 60% of congenital anomalies are of unknown etiology.[3,4] 20-25% of anomalies the cause is multifactorial.10-13% are because of environment and 12-25 % are attributed to genetic causes. Among the risk factors are advanced maternal and paternal age, consanguinity, teratogenic agents and nutritional deficiencies. Low socioeconomic status and poor

antenatal care prevents early diagnosis of the malformations.

Our hospital is a tertiary care medical college hospital receiving patients from nearby districts. It is important to know the frequency, pattern of congenital anomalies and various presentations. This in turn will help to develop strategies for patient counselling and management. Patient should be seen early in pregnancy and second trimester ultrasound scan should be performed. Neonatal management along with medical and surgical intervention counselling needs to a part of the strategy. Obstetric management planning will prevent complications as these patients have associated risk factors like anaemia, gestational diabetes, polyhydramnios, and malpresentations.

This study was aimed at presenting the spectrum of various congenital anomalies, epidemiological features of pregnant women with anomalous fetus. Fetal and neonatal details. Other associated antenatal complications and mode of delivery.

METHODS

Retrospective, analytical hospital based study of patients who delivered or aborted congenital anomalous baby from a period of 1st Jan 2012 to 31st August 2015. There were a total of 3616 deliveries noted in this period. Relevant information regarding maternal age, parity, gestational age, birth weight, sex, and consanguinity was documented. Significant antenatal history like maternal illness, ingestion of drugs, exposure to radiation and complications of labor was recorded. Whether the patient had an antenatal ultrasonography (USG) scan and findings were noted. All the aborted fetus and newborns were examined for congenital malformations soon after delivery.

RESULTS

During the study period 45 congenital anomalies were seen in delivered babies and aborted foetuses, 32 (71%) patients were in the age group of 20-29 years, >30 years were 12 (27%). 17 (37%)patients were primigravida. 35 (77%) patients were from rural area and 29 (65%) were unbooked patients.

Majority of patients 39 (80%) had only middle school education and were from low socio economic status.

The incidence of congenital malformations was higher among abortions and preterm deliveries with respect to full term deliveries (26). The number of still births was high in this group (85%).

31 (68%) patients had anomalies diagnosed on antenatal ultrasound. 14 patients who did not have antenatal scan 8 (50%) underwent caesarean section. The indications were neonatal like IUGR, fetal, and distress.

The number of congenital anomalies is more in low birth weight babies. The occurrence was more in female than male.

Central nervous system was the most common system involved followed by musculoskeletal system Table 5. Anencephaly was the common malformation seen in 12 (27%) patients.

One patient with consanguineous marriage, had history of congenital malformation in previous pregnancy. Despite all antenatal investigations in current pregnancy had Epidermolysis Bullosa (undiagnosed) with intrauterine fetal death at 37 weeks of gestation. She had a caesarean section delivery for non-progress of labour.

DISCUSSION

The occurrence of congenital anomalies seen in delivered babies and aborted fetus was more in primi gravida and in the age group of 20-29 years 32 (71%) patients which is different than other studies where higher incidence was noted in babies born to mothers with age above 30 years. Singh A et al.[5] Both these results could be explained on the basis of the number of patients from rural area was 77%, 65% had no antenatal care belonging to low socioeconomic status.[6] In the study by Basavanthappa SP et al higher incidence was seen in patients with low socioeconomic status and no antenatal care Table 1.

Table 1: Demographic pattern of patients.

	Number n=45	Percent %		Number n=45	Percent %
Age < 19	01	2	Rural	35	78
20-29	32	72	Urban	10	22
>30	12	26			
Parity			Booked	16	35
Primi	17	38	Unbooked	29	65
Multi	28	62			

The congenital anomalies reported was 13% in abortions, 32% between 21-28 weeks of gestation, 28% between 28 to 36 week and only 28% in full term births. It was concluded in various previous studies that incidence of congenital anomalies is higher among abortions and preterm births Bhat et al, Sachdeva et al, which are consistent with the result of our study.[7-9] The number of still births was 85%, similar reports are reported in studies by Sachdeva et al and Chaturvedi.[9,10] In our study we found that 60% of foetuses were female and remaining were male, same as reported by Parmer et al[11] and Sachdeva et al.[9]

The prenatal ultrasound at 18 to 20 weeks can detect major structural anomalies in approximately 60% of cases.[12] Prenatal diagnosis of congenital anomalies provide information for decision on pregnancy and labour

management. In our study 68% patients had anomalies diagnosed on antenatal ultrasound, 14 patients who did not have antenatal scan 8 (50%) underwent caesarean section for neonatal indications like IUGR and fetal distress Table 2 and 3.

Table 2: Congenital anomalies diagnosed on Ultrasonography.

	Number n=45	Percentage
Patients with anomalies diagnosed on USG	31	68
Patients with anomalies not diagnosed on USG	14	32

Table 3: Mode of delivery.

Mode of delivery	Number n=45	Percentage
Abortions	10	22
Preterm	16	35
Vaginal delivery	05	11
LSCS	14	32

Various associated risk factors noted in the study were anaemia 30%, Oligohydramnios 16% polyhydramnios 20%, twins 10%, Breech 10%, IUGR 10%, Previous caesarean section 20%, Rh negative mother 10%,PIH 15% similar spectra of risk factors was seen by Gupta S.[13]

Table 4: Associated risk factors.

Risk factors	Number n=45	Percentage
Anaemia	14	30
Oligohydramnios	07	16
Polyhydramnios	09	20
Breech	05	10
Twins	05	10
Preterm	25	55
PIH	08	15
Rh-ve	05	10
Previous CS	09	20
IUFD	06	13

In our study 49% of cases involved central nervous system (Figure 1). Anencephaly amounting to the most common factor contributing to perinatal mortality. Gupta and Fatima also reported same findings. Followed by musculoskeletal system.[13,14] The low prevalence of cardiovascular defects at birth is due to the fact that most CHD's become symptomatic by 2-4 months of age. In chromosomal anomalies Down's syndrome was most frequently seen. Congenital talipes equino varus was the commonest musculocutaneous abnormality observed Table 5.

Figure 1: Epidermolysis Bullosa.

Figure 2: Anencehaly.

CONCLUSIONS

The present study concluded that numbers of congenital anomalies were more in rural patients. Incidence of congenital anomalies was higher in stillborn as compared to live born neonate.

Central nervous system was commonly involved, anencephaly was the commonest anomaly. Increasing awareness of maternal care, use of Folic acid, early diagnosis, antenatal ultrasonography, proper counselling for this pregnancy and subsequent pregnancy can take care of the couple to face this dreaded complication of pregnancy.

Early detection and termination of congenital anomaly will reduce the birth of babies with congenital anomalies. It will also ease the economic burden, psychological trauma to the parents and family. Collaboration between Obstetrician, Pediatricians, Geneticist and Sonologist is required for management of viable congenital anomalies.

Limitations

The study represents a small number of patients reporting to our hospital. Maternal risk factors like intake of folic acid or exposure to teratogenic factors or fever were not evaluated as it is a retrospective study.

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