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Gynaecology

STUDY OF RELATIONSHIP OF OBESITY AND RELIGION ON THE PREVALENCE OF CONGENITAL ANOMALIES, GOVT GENERAL HOSPITAL,KURNOOL

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ABSTRACT **BACKGROUND:** Congenital anomalies are responsible for a remarkable proportion of mortality and morbidity in the newborns. These may result from defective embryogenesis or intrinsic abnormalities in development. They are associated with various risk factors like age, parity, dietary habits, lifestyle ,obesity and other risk factors. In our study, we wanted to note the relationships of obesity ,community and their influence on anomalies.

KEYWORDS : Congenital anomalies, Obesity, Religion, Folic acid.

INTRODUCTION:

Congenital anomalies affect a remarkable proportion of newborn population and contribute significantly to the childhood mortality and hospital admissions. They add a negative stigma to entire woman's family and her future life.

They are the leading cause of perinatal mortality, morbidity and disability in many countries. Lot a more studies on congenital anomalies are required to establish baseline rates, document changes over time, identify aetiological factors finally to save millions of national health care budget. Congenital anomalies are one of the commonest causes of death in children upto 5 years of age.

AIM OF THE STUDY:

To study the prevalence of congenital anomalies in the pregnant at all gestational ages converging on obesity and religion from June 2018 to February 2019 attending GOVERNMENT GENERAL HOSPITAL, KURNOOL MEDICAL COLLEGE, KURNOOL, ANDHRA PRADESH,INDIA.

OBJECTIVES:

1) To identify the incidence.
2) To define the risk factors.
3) Study the incidence of specific types of anomalies.
4) Note the method of termination.
5) Correlate the prevalence with genetic, communal, environmental factors and obesity.

METHODOLOGY:

The study population includes pregnant women of all gestational ages with congenital anomalies from June 2018 to February 2019. Investigations including- Hb, Rh typing, RFT, LFT, RBS and special ones like STORCH screening, AFP, Beta Hcg, Ultrasound.

OBSERVATION AND RESULTS:

Out of 9056 deliveries, 20 were reported with an incidence of about 0.2%.

TABLE 1: AGE DISTRIBUTION OF CONGENITAL ANOMALIES

Age group	No. of pregnant women	Percentage
<20	2	10 %
21-25 years	10	50 %
25-30 years	6	30 %
>30 years	2	10 %

When you observe the maternal age among the 20 cases, 2 (10%) are teenage pregnancies and 2(10%) are above 30 and rest of them (80%) are between 20 -30 yrs. The mean age of incidence of congenital anomalies is 24.5 years.

SOCIOECONOMIC STATUS - All of them belong to low socio economic status.

TABLE 2: DISTRIBUTION OF CONGENITAL ANOMALIES AND PARITY

Parity	No of patients	Percentage
P0	6	30 %
P1	6	30 %
P2	6	30 %
>P3	2	10 %

In the study 30% are primigravida and the bulk,70% are multigravidae.

TABLE 3:DISTRIBUTION OF CONGENITAL ANOMALIES ACCORDING TO RELIGION

Religion	No of pregnant women	Percentage
Christian	2	10 %
Muslims	7	35 %
Hindu,Jains and other religion	11	55 %

Muslims alone forms 35% of the study and the neural tube defects being more common.

TABLE 4: DISTRIBUTION OF ANOMALIES AND WEIGHT

BMI	No of pregnant women	Percentage
<18	2	10 %
18-25	7	35 %
>25	3	15 %
>30	8	40 %

40% of the them are obese with pre pregnancy BMI>30kg/m2.

TABLE 5: RELATION BETWEEN DIET AND ANOMALIES

Diet	No of pregnant women	Percentage
Non vegetarians	18	90 %
Vegetarians	2	10 %

Majority(90%) of the women are non vegetarians , which is stressing the need for further study of correlation between diet and anomalies which may be due to excessive non vegetarian diet consumption leading to obesity and folic acid deficiency .Excessive consumption of fried liver lead to hypervitaminosis A and related anomalies.

TABLE 6 : DISTRIBUTION OF ANOMALIES

System involved	No of pregnant women	Percentage
CNS	15	75%
CVS	2	10%
GIT	3	15%

The neural tube defects(60%) are the most common one found comprising 12 out of 20.

TABLE 7 : DISTRIBUTION OF CRANIOSPINAL ANOMALIES

Anomaly	No of women	Percentage
Anencephaly	7	35 %

Meningocele	2	10 %
Arnold Chiari malformation	2	10 %
Dandy walker syndrome	1	5 %

35% have anencephaly(shown in image 1),10% meningocele,10% Arnold Chiari malformation, 5% Dandy walker syndrome.

Image 1: Anencephaly

TABLE 8: RELATION BETWEEN CONGENITAL ANOMALIES AND CONSANGUINITY

Consanguinity	No of pregnant women	Percentage
1 st degree	0	0%
2nd degree	2	10 %
3 rd degree	1	5 %
Not consanguinous	17	85 %

3 cases have history of consanguinity. They have craniospinal anomalies (Arnold Chiari malformation, Dandy walker syndrome, Spina- bifida with myelomeningocele).

TABLE 9: DISTRIBUTION OF CONGENITAL ANOMALIES ACCORDING TO GESTATIONAL AGE

Gestational age	No of pregnant women	Percentage
<14 weeks	0	0 %
14-28 weeks	16	80 %
28-40 weeks	4	20 %

Most of the cases (80%)were identified and got terminated during second trimester as many of them in developing countries have their first checkup during second trimester.

RECURRENCE - In my study, only one case(5%) is having recurrence. This pt. inspite of folic acid prophylaxis in the periconceptional period developed which is showing that this may be multifactorial.

H/O MEDICAL DISORDERS - Here one patient found to be on eltroxine since 2 years ,another patient has completed ATT before conception.

LOCAL INFECTION - 50% took treatment(local pessaries) for vaginal discharge by qualified doctors and none of them have used systemic drugs.

TABLE 10 : PREVALENCE OF ANEMIA

Hb %	No of pregnant women	Percntage
<6	2	10%
6-8	4	20%
>8	14	70%

TABLE 11 : MODE OF TERMINATION

Method of terminaton	No of pregnant women	Percentage
Foleys bulb with misoprostol	18	90 %
Ethacridine lactate	1	5 %
spontaneous	1	5 %

Among 20 cases,18 cases(90%) were terminated with foleys bulb followed with misoprostol , one case(5%) with ethacridine lactate solution and one case(5%) delivered spontaneously.

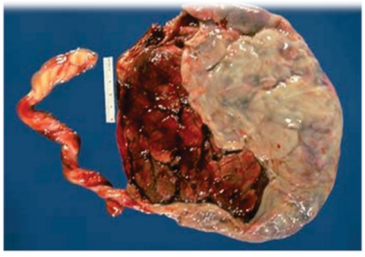
TABLE 12: DISTRIBUTION OF INDUCTION DELIVERY INTERVAL

Induction delivery interval	No of pregnant women	Percentage
< 24 hrs	10	50%
24-48 hrs	7	35%
>48 hrs	3	15%

Among the 20 cases, 10(50%) were terminated within 24 hours ,7(35%) took induction delivery interval of about 24-48 hrs and 3 (15%)cases more than 48 hrs.

PLACENTA - Placenta weight, size are recorded. Placenta size is corresponding to the weeks of gestation. Three cases were found to have chorioamniotis on histopathological examination shown as in image 2.

Image 2:Placenta with chorioamnionitis



- 5 - Placenta, chorioamnionitis - Gross A placenta with chorioamnionitis. The fetal membranes, which have flipped over to cover half of the maternal surface, are thickened and gray-tan instead of thin and translucent.

DISCUSSION :

Congenital anomalies affect a remarkable proportion of newborn population contributing significantly to the childhood mortality, hospital admissions and millions of health care budget wastage.

Incidence of congenital anomalies in my study is 0.2% which is low when compared to R.K Devi et al[1],Jayalakshmi Pabbati et al[2] ,M.Sandhya Rani et al[3] and Kokate P et al[5] where the incidence is 0.9%,0.66%,4.8% and 0.9% respectively.

Maternal age- congenital anomalies are more common in maternal age group of 21 -25 years (50%)followed by 25-30 years (30%)which is similar to other studies of R.K Devi et al[1],Jayalakshmi Pabbati et al[2] and M.Sandhya Rani et al[3].

They are common among women of low socio economic status which is similar to others.

Our study shows anomalies with high incidence in P0-P2 contradictory to the study of Prasannajeek Kokate et al[5] , Anjum Ara et al[7],Jayalakshmi Pabbati [2]where anomalies are common in high parity > P3.

System wise distribution of anomalies is showing that CNS is most commonly affected comprising about 75% similar to M.Sandhya Rani et al[3](40%), Prasannajeet kokate et al[5] (45%).

Neural tube defects are more common and particularly among Muslims which is similar to the study of Anjum Ara et al[7] but differing from R.K.Devi et al[1] where they are more common among Hindus.

In this study,15% of cases are having consanguinity which is more or less equal compared to other authors and that all these cases have NTD.

Many Congenital anomalies are found between GA of 14-28 weeks which is similar to other studies conducted in different parts of country. Recurrence rate is 5% which is almost similar to study of Sandhya Rani et al[3] (2%).

Two cases have medical disorders ,one is on eltroxine (hypothy roidism) and the other one completed ATT before conceptionitself.

Maternal obesity is associated with an increased risk of structural anomalies, although the absolute increase is likely to be small[6]. In this study, obese women are having high incidence of NTDs like spina bifida and CVS anomalies similar to the meta-analysis of Stothard KJ , Tennant PW, Bell R, Rankin J[6].

In the study of Sandhya Rani et al [3] 90% of cases are reported with BMI<18 kg/m2. It may be associated with nutritional deficiencies specifically to the reduced folate levels (protective effect of folic acid in reducing the risk of neural tube defects).

Obesity and DM share similar metabolic abnormalities including

insulin resistance and hyperglycemia. Maternal diabetes is an established risk factor for congenital anomalies especially CNS and CVS anomalies.

CONCLUSION :

In my study, I noticed central nervous system anomalies being on the top of the table. In present study 40% are obese(BMI>30kg/m2) showing the direct relation of obesity and congenital anomalies. The commonest anomaly what we found is anencephaly. This can be explained by the low levels of Folic acid in obese women.

In my study, 35% are muslims forcing the further need of focus on communal relationship to anomalies. It may be related to personal dietary habits and lifestyle. Because they consume more non vegetarian diet causing hypervitaminosis A showing the relationship of diet and anomalies.

I can conclude that there is every need to support maternal and health care services by strengthening enriched nutrition, supplementing folic acid, vitamins and proteins.This can be brought up by improvised global health care system.

An emphasis and alarm on the role of periconceptional weight gain should not be forgotten, BMI should be kept within normal limits and there is need of further studies to establish the relationship among anomalies, diet,obesity and other factors.

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