

## Pattern of Congenital Malformations in Newborn

*Dr. N. Kumar, MD,*

Assistant professor of pediatric

**Corresponding Author : Dr. P. Thiagarajan, MD,DCH, Dr.Pugazhendhi,MD,DCH**

College : Coimbatore Medical College Hospital, Coimbatore, Tamil Nadu, India

**Abstract:** This hospital based prospective study highlights the point prevalence of congenital malformations over a period of 6months. Over all incidence calculated is 2.2%. Malformations more in females (F: M=1.2:1), and in neonates ofyounger mothers 18-21 years. The pattern included CNS 28.5%, CVS 24.6%, GIT14.2%, musculoskeletal 11.6%,multiple congenital anomalies 9.8%, chromosomal anomaly 7.7%, and Genitourinary 2.4%, RS 1.2%. In CNS,meningomyelocele was the most common malformation. Frequency is more in term than in preterm (1.7% vs. 0.5%),vaginal delivery than LSCS (1.35 VS 0.9 %.) The present study stresses upon the importance of thorough clinicalexamination of neonate at birth and encourage routine neonatal screening for malformations during NB period.

**Key word: Congenital, Malformation, Newborna**

### INTRODUCTION:

Congenital anomaly is an abnormality of structure of any body part that can be present at birth or become clinically manifest anytime later in life. There is a wide variety of fetal problems which range from relatively minor abnormalities to major structural defects<sup>1</sup>. A prenatal diagnosis is possible by second trimester maternal ultrasonography<sup>2, 3</sup>. Hence, either fetal surgical procedures in utero or neonatal surgical interventions soon after birth can be taken. These early corrective procedures are done not only to restore the structure and also the function. Early recognition of malformations are important for planning care and in some conditions like TEF, Diaphragmatic hernia, intestinal atresia/obstructions and anorectal malformations, immediate surgery is essential. The birth of an infant with major malformation, whether diagnosed antenatally or not, evokes an emotional parental response<sup>4</sup>. The world wide incidence of congenital disorder is estimated as 3-7%. But actual numbers vary widely between countries<sup>5</sup>. Although different studies have been undertaken in different parts of the world as well in India, but no study has been undertaken in this part of the country. Thus a study was done to document the pattern of congenital malformations in newborn.

### MATERIALS AND METHODS:

This prospective observational study was undertaken in Coimbatore Medical College Hospital, Coimbatore, India. All neonates born in the Department of Obstetrics and Gynaecology from June 2016 to Jan 2017 were included in the study. Both mother and baby were examined as a unit within 24 hours of birth and were further followed up to 72 hours. A detailed history was taken including all familial and

gestational factors and meticulous examination of baby was done. Particular importance was given to assess the facial profile for dysmorphism and dermatoglyphics for making a provisional diagnosis of chromosomal disorders. Neonates with at least one malformation or suspected to have chromosomal disorders were screened for other malformations and they subjected to Karyotyping, USG abdomen, Echo cardiogram, Neuro imaging for internal anomalies.

### RESULTS:

During the six month study, there were 3352 deliveries conducted in our hospital. Out of these 77 had congenital malformations accounting to an incidence of 2.2%. Out of these, 70 had a single congenital anomaly and rest 7 had multiple congenital anomalies.

#### Pattern of Congenital Anomalies

S.No	Type of anomaly	Number	Percent age
1	CNS( Meningomyelocele-10, Microcephaly-7, Hydrocephalus-5)	22	28.5
2	CVS( VSD-12, TGA-4, Tricuspid atresia-1)	19	24.6
3	GIT(Cleft lip and palate -4, Cleft palate-3, Tracheoesophageal fistula-4)	11	14.2
4	Musculo skeletal ( CTEV-5,	9	11.6



	Congenital absence of depressor anguli oris-2, Congenital genu recurvatum-2)		
5	Multiple Congenital Anomalies	7	9.8
6	Chromosomal anomaly( Trisomy 21 - 5, turners syndrome-1)	6	7.7
7	Genitourinary( Anorectal anomaly -1, Polycystic kidney disease-1)	2	2.4
8	RS( congenital diaphragmatic hernia)	1	12

Total: 77

Congenital malformations were seen more in neonates born to younger mothers 18-21 years (60%). Malformations more in females (F: M=1.2:1). Frequency is more in term than in preterm 1.7% vs. 0.5%, vaginal delivery than LSCS 1.35 VS 0.9% and also more in Primi gravida (1.8%) than multi (0.4%). Consanguinity either 2\* or 3 \* noted in 30 parents among 77 cases of malformations. Exposure to drug history was positive in one multiple congenital anomaly. Carbamazepine for epilepsy was the offending drug. None of the mother who delivered malformed babies gave history of exposure to radiation, smoking, alcohol, substance abuse during pregnancy. No undiagnosed IDM identified. All mothers diagnosed to have diabetic during pregnancy received proper care and none of the IDM had malformations.

#### DISCUSSION:

In the present study, the over all incidence of congenital malformation was 2.2%, which was comparable with other studies also<sup>6-10</sup>. The incidence varies from 2-2.5% in these studies.

With regard to pattern of congenital anomalies in the study, the most common system involved was central nervous system (28.5%), followed by CVS,GIT, Musculoskeletal, Multiple congenital anomaly, Chromosomal, Genitourinary, Respiratory system in that order. This is comparable to studies conducted by Datta V et al<sup>11</sup> and Khatemi F et al<sup>12</sup>. However some studies recorded higher incidence of musculo skeletal system<sup>6-10</sup>. Here malformations were more in primigravida comparable to Chaturvedi P et al<sup>13</sup> study.

#### CONCLUSION:

Peri conceptional folic acid, avoidance of consanguineous marriage, meticulous AN USG screening would prevent most

of the congenital anomalies. This study will help to know the pattern of malformations and its relation to familial gestational factors and to plan future strategies for prevention, early diagnosis, fetal therapy, early treatment from neonate.

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