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PROFILE OF BIRTH DEFECTS AMONG LIVE NEWBORNS AND THEIR MATERNAL MOTHERS FACTORS FROM A TERTIARY CARE INSTITUTE

Gynaecology

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ABSTRACT

Background: Congenital malformations are defects in morphogenesis during early fetal life. Although, its etiology is unknown in 50% of cases, genetic (30-40 %) and environmental
(5- 10 %) form the majority of known causes. Malformations may range from minor abnormalities to major structural defects. Minor abnormalities involve non vital organs with little or no functional effects and there is no urgency for their correction whereas major anomalies impair function or are of significant cosmetic value. These may even be life threatening requiring immediate medical/surgical treatment. Congenital malformations are the fourth major cause of neonatal mortality in India after prematurity, neonatal sepsis and birth asphyxia
Objective: To study the profile of gross congenital malformations among live newborns and its associated risk factors.
Material and methods: All the babies born in Govt.Kilpauk Medical College hospital (live births) during January 2016 to December 2016 formed the baseline population and those with congenital malformations were included in the study. Antenatal records were assessed .
Study design: Cross- sectional, descriptive.
Results: There were5603 live births out of which 109 had gross congenital malformations giving an incidence of 1.1%. Gastrointestinal system was most commonly affected (21%) followed by musculoskeletal (13%) and multiple anomalies (16%). Incidence of congenital malformations was more among multipara females, preterm and low birth weight babies.
Conclusion: A relative decrease in the incidence of congenital malformations once again implies the recent National Health Mission programs and various Tamil Nadu government programs on Antenatal mothers, Delivery and Newborn care including . We also, strongly recommend mandatory screening of all newborns by pediatrician after birth at every health centre, District/Taluk hospitals for timely detection and best possible treatment of these congenital malformations.

KEYWORDS

congenital malformation, newborn, live birth, antenatal, genetic.

Introduction:
A **birth defect**, also known as **congenital disorder**, is a condition present at birth regardless of cause.[3] They may result in health problems such as physical disability, intellectual disability, or developmental disability.[3]Severity may vary from mild to severe.[7] Congenital malformations are defects in morphogenesis during early fetal life. Although, its etiology is unknown in 50% of cases, genetic (30-40 %) and environmental (5- 10 %) form the majority of known causes. Malformations may range from minor abnormalities to major structural defects. Minor abnormalities involve non vital organs with little or no functional effects and there is no urgency for their correction whereas major anomalies impair function or are of significant cosmetic value.

These may even be life threatening requiring immediate medical/surgical treatment. Congenital malformations are the fourth major cause of neonatal mortality in India after prematurity, neonatal sepsis and birth asphyxia. With gradual reduction in mortality due to other causes in view of improvement in perinatal and neonatal care, there has been an increase in the proportion of deaths due to congenital malformations. Global incidence of congenital malformations is 3-7 %, however, ethnic and geographic variations exist between countries. In India, 2.5 % infants are affected at birth accounting for 8-15 % of perinatal and 13-16 % of neonatal mortality.

The incidence rises to 5 % if anomalies detected later in childhood such as heart, kidney, lung and spine are included.6 Apart from this, congenital anomalies result in approximately 3.2 million birth defect related disabilities every year. 3 Minor anomalies visible to naked eye may sometimes be associated with serious underlying major defects such as heart defects, neural tube defects and renal anomalies which if detected and treated timely can go a long way in reducing morbidity and mortality in later life. Also, parental counseling done at this stage for future prenatal testing would be more valuable as parents are more receptive at this stage. Since, there is a relative paucity of literature on congenital malformations in newborns in our country; we therefore, planned this study to present the incidence and pattern of congenital malformations in newborns at birth and to identify its possible risk factors from a tertiary care teaching hospital of north India.

Objective: To study the profile of gross congenital malformations among live newborns and its associated risk factors.

Material and methods: All the babies born in this hospital (live births) during January 2016 to December 2016 formed the baseline population and those with congenital malformations were included in the study. Antenatal records were assessed and mothers were interviewed for socio-demographic variables.

Study design: Cross- sectional, descriptive.

Results:

Table:1.

Number of ANC registrations	0	6	1	1	2
Number of deliveries	0	5	0	5	5
Number of abortions	0	0	6	9	2

Number of abortions for birth defects	0	0	0	2	3
Number of Live births	0	5	6	0	3
Number of Still births	0	0	0	0	4
Number of Birth Defects reported	0	0	0	6	2

Table:2

Types of Birth defects(Number)				
Cardiovascular	0	0	0	5

Nervous system	0	0	0	5
Gastrointestinal	0	0	1	3
Musculoskeletal	0	0	0	8
Multiple anomalies(More than 2)	0	0	1	0
Downs syndrome	0	0	0	0
Ambiguous Genitalia	0	0	0	2
Others	0	0	1	9

Table 3: Risk factors (Maternal and Fetal). Risk factors Total Malformed (%) p value Maternal:

Table 3: Risk factors (Maternal and Fetal). Risk factors Total Malformed (%) p value Maternal:

Risk factors	Total N=5603	Malformed (%)	p value
Maternal:			
Age:			
a.< 20 years	1139	10	0.08965 NS
b.20-35 years	4108	44	
c. > 35 years	356	8	
Parity:			1.118 NS
< 4	4783	78	
> 4	1360	31	
Consanguinity:	48	8	0.1291 NS
No Consangunity	5555	54	
Sex:			
a. Male	3400	36	0.18 NS
b. Female	2203	26	
Birth weight:			
a. <2.5kg	1963	38	0.00001315 SIGNIFICANT
b. ≥2.5kg	3640	24	
Gestation:			
a.<37wks	1956	32	0.005530 SIGNIFICANT.
b.>37wks	3647	30	

Discussion:

There were5603 live births out of which 62 had gross congenital malformations giving an incidence of 1.1%. Gastrointestinal system was most commonly affected (21%) followed by musculoskeletal (13%) and multiple anomalies (16%). Incidence of congenital malformations was more among multipara females, preterm and low birth weight babies.

Conclusion:

A relative decrease in the incidence of congenital malformations once again implies the recent National Health Mission programs and various Tamil Nadu government programs on Antenatal mothers, Delivery and Newborn care including . We also, strongly recommend mandatory screening of all newborns by pediatrician after birth at every health centre, District/Taluk hospitals for timely detection and best possible treatment of these congenital malformations.

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