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Paediatrics

A STUDY OF CONGENITAL MALFORMATION CASES ATTENDING OPD IN A PRIVATE MEDICAL COLLEGE IN W G DIST, AP

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ABSTRACT Congenital anomalies are important causes of infant and childhood deaths, chronic illness and disability. The aetiologies of the anomalies may be of very wide range. Some of these defects are quite visible and can be diagnosed in physical examination itself while others need investigative procedures. Early recognition of the birth defects and analysis of the pattern of these anomalies may help us in developing proper strategies for their prevention and intervention programmes.

OBJECTIVES: To observe the common congenital anomalies in children presenting at out-patient clinic in a tertiary care hospital

AIM: To postulate the preventive strategies for the most prevalent congenital anomalies in children

SUBJETS & METHODS: Children attending OPD clinic at Asram Hospital between ages of 2 mo to 12 years

STUDY DESIGN: Prospective observatory study

STUDY PERIOD: One year: Sept 2018 to August 2019

METHODOLOGY: Detailed history and clinical examination findings of all children with congenital anomalies are collected, tabulated and analysed

RESULTS: Musculoskeletal anomalies are the most common congenital defects noted, followed by genito-urinary anomalies.

CONCLUSIONS: Musculoskeletal system anomalies are the most prevalent defects notice in our study followed by those of genitourinary system. Majority of the defects affected 1st and 2nd order children. Males are affected twice than female children. Consanguinity was seen in parents of only one fourth of the cases. There is no significant association found with maternal or paternal education levels or occupation detail.

KEYWORDS : Congenital, Anomalies, Consanguineous, Birth defects, Deformities

INTRODUCTION:

Congenital anomalies are also known as birth defects, that may be manifest at birth, or may be detected later in infancy. An estimated 303 000 newborns die within 4 weeks of birth every year, worldwide, due to congenital anomalies[1]. Congenital anomalies can contribute to long-term disability, which may have significant impacts on individuals, families, health-care systems, and societies.

Human malformations and dysplasias can be caused by gene mutations, chromosome aberrations and copy number variants, environmental factors or interactions between genetic and environmental factors. Birth defects can be subdivided into isolated (single) defects or multiple congenital anomalies in one individual[2]. Major malformations are structural abnormalities that have medical and cosmetic consequence; whereas minor ones are those with no such significance[4].

Genes play an important role in many congenital anomalies. Consanguinity also increases the prevalence of rare genetic congenital anomalies and nearly doubles the risk for neonatal and childhood death, intellectual disability and other anomalies. Some ethnic communities have a comparatively high prevalence of rare genetic mutations.

It is estimated that about 94% of severe congenital anomalies occur in low- and middle-income countries. Maternal exposure to certain pesticides and other chemicals, as well as certain medications, alcohol, tobacco and radiation during pregnancy, may increase the risk of having a fetus or neonate affected by congenital anomalies. Working or living near, or in, waste sites, smelters or mines may also be a risk factor, particularly if the mother is exposed to other environmental risk factors or nutritional deficiencies.

Although congenital anomalies may be the result of one or more genetic, infectious, nutritional or environmental factors, it is often difficult to identify the exact causes.

Some congenital anomalies can be prevented. Vaccination, adequate intake of folic acid or iodine through fortification of staple foods or supplementation, and adequate antenatal care are examples of prevention methods.

Through the resolution on birth defects of the Sixty-third World Health Assembly (2010), Member States agreed to promote primary prevention and improve the health of children with congenital anomalies by:

- developing and strengthening registration and surveillance systems
- developing expertise and building capacity
- strengthening research and studies on etiology, diagnosis and prevention
- promoting international cooperation.

DETECTION:

Rates of some congenital malformations in India are highest in the world. Many studies to prevent the malformations are underway. Apart from consanguineous marriage, infections during pregnancy and folic acid deficiency, history of drugs during pregnancy has been hypothesized as one of the causal factors[2].

Preconception screening can be useful to identify those at risk for specific disorders or at risk of passing a disorder onto their children. Screening includes obtaining family histories and carrier screening, and is particularly valuable in countries where consanguineous marriage is common.

REVIEW OF LITERATURE:

National Health Portal (March of Dimes report, 2006) mentions that the prevalence of birth defects in India is 6-7% which translates to around 1.7 million birth defects annually. The common birth defects include congenital heart disease (8-10 per 1000 live births), congenital deafness (5.6-10 per 1000 live births), and neural tube defects (4-11.4 per 1000 live births)

Prajkta Bhide, Pooja Gund, Anita Kar (2016) noted the prevalence of major congenital anomalies as 230.51 per 10,000 births. Congenital heart defects were the most commonly reported anomalies in the cohort with a prevalence of 65.86 (37.72–114.77) per 10 000 births. Although neural tube defects were two and a half times less as compared to congenital heart defects, they were nevertheless significant at a prevalence of 27.44 (11.73–64.08) per 10 000 births. In this cohort, congenital anomalies were the second largest cause of neonatal deaths. The congenital anomaly prenatal diagnosis prevalence was 10.98 per 1000 births and the congenital anomaly termination of pregnancy rate was 4.39 per 1000 births Ara Anjum,

Kumar Dinesh, Dewan Deepika, Digra Nasib C. (2018) recorded 1600 live births and noted 54 babies had CAs resulting in the incidence rate of 33.7/1000 live births. The incidence rate was comparatively higher among women aged <20 years (71.4/1000 live births) and with Para 4 (43.5/1000 live births) as compared to other women. Digestive system was the most common system involved (35%) followed by the Central nervous system (26.6%). The U-shaped pattern in the incidence of CAs with regards to parity and maternal age was observed.

Surendra B Mathur and Sharmila B Mukherjee;(2017) observed that annually 3.3 million deaths are associated with birth defects, mainly major anomalies. More than 90% of infants with a serious birth defect are born in low- and middle-income countries, which lack adequate antenatal diagnostic and postnatal corrective services

AIMS & OBJECTIVES:

- To find the pattern of congenital anomalies in children attending a tertiary care hospital in W Godavari district.

SUBJECTS:

Children attending the pediatric OPD of a tertiary care hospital in West Godavari district of Andhra Pradesh.

METHODOLOGY

All children noticed as having congenital malformation either clinically or after investigations are included in this study. A profarma was developed for entry of data as though history and clinical examination findings. The collected data was tabulated in MS Excel sheet and statistical analysis was done using IBM EpiInfo package.

OBSERVATIONS AND RESULTS:

Table 1. System-Wise involvement

System Affected	Number
CVS related	12
CNS related	14
Genitourinary	24
Musculoskeletal	48
Ophthammological	4
Dermatological	2
Down syndrome	4
TOTAL	**108**

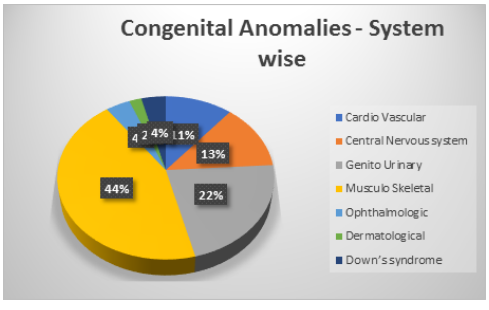

Fig 1. System-wise distribution of subjects

Sex distribution of subjects:
Table 2: Sex Distribution

Sex	Num
Male	74
Female	34
TOTAL	**108**

Informant:
Table 3: Informant detail

Informant	Num
Mother	62
Father	8
Others	26
No data	12
TOTAL	**108**

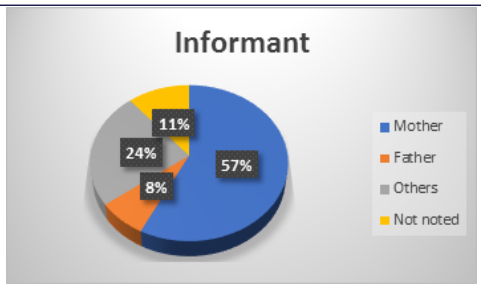

Fig 2. Informant Detail

Mother's Education:
Table 4. Mother's Education Status detail
Mother's Occupation:

Education Level of Mother	Num
No schooling	28
1st to 10thClass	62
Pre-Degree	14
Degree	2
No data	2
TOTAL	**108**

Mother's Occupation:
Table 5. Mother's Occupation detail

Occupation of Mother	Num
Unskilled	10
Professional/Executive	2
House Hold Work	86
TOTAL	**108**

Father's Education:
Table 6. Father's Education Status detail

Education Level of Father	Num
No schooling	28
1st to 10th Class	42
Pre-Degree	18
Degree	**10**
Postgraduate	**2**
Technical	**4**
Professional	**2**
No data	**2**
TOTAL	**108**

Father Occupation:
Table 7. Father's Occupation detail

Occupation of Mother	Num
Unskilled	54
Skilled	22
Office going	8
Professional/Executive	6
Unemployed	13
TOTAL	**108**

Consanguinity
Table 8. Consanguinity Detail of parents

Consanguinous Parents	26
Non consanguineous Parents	82
TOTAL	108

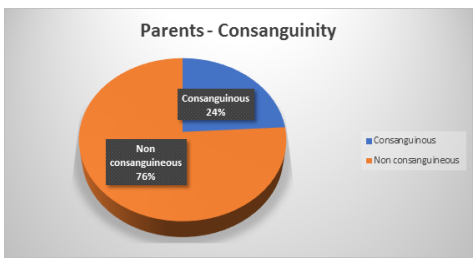

Fig 3. Consanguinity in parents

Birth Order

Table 9. Birth Order of the children

1st Born	46
2nd Born	44
3rd Born	10
4th Born	6
> 4 in birth order	2
TOTAL	108

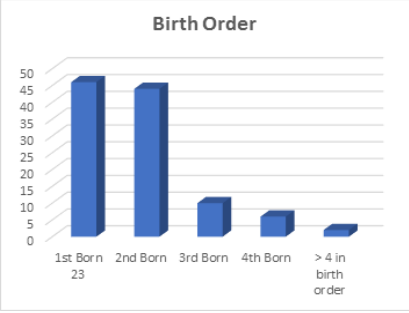

Fig 4. Birth Order of Subjects

CONCLUSIONS:

In this study it was noted that the frequency of congenital anomalies in males is twice that of in female children.

Only one fourth of the children are born to consanguineous parents
Major anomalies noticed are with musculoskaletal system and followed by those of genitourinary system.

Anomalies are more in 1st and 2nd born children than in higher order children.

Though no conclusions can be obtained from this observation, it was found that mothers with 10th Class education only and those with no educations are having children with malformations more.

Limitations of the study:

This is a very small study and period of study is also half an year only. A larger study may be needed to develop proper prevalence of congenital anomalies in our surroundings and to plan proper preventive strategies. A larger and longer observation can help in giving us an idea of the distribution pattern of non-lethal birth anomalies in the society in this area.

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