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Congenital Malformations Recorded In four Hospitals In Central Part of Cross River State, Nigeria.

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ABSTRACT: *This study was aimed at studying the incidence of congenital malformation in four hospitals located in the central part of Cross River State of Nigeria and to assess records keeping of these malformations in the area of study. The data was obtained from yearly birth records from records office of the maternity sections of these hospitals from 1992 to 2005.A total of 2,932 births were recorded from the four hospitals studied from 1992 to 2005. Out of these number of births, 22 (0.75%) were congenitally abnormal. The highest number of anomalies 8 (36.37%) was associated with the central nervous system. Gastrointestinal tract and skeletal system accounted for 7 (31.83%) and 4(18.19%) cases respectively. Anomalies of cardiovascular system and urogenital system were 1 (4.55%) and 2 (9.09%) respectively.The high incidence of the central nervous system anomalies seen may be attributed to nutritive status of the mother in this area. The hospitals studied are in rural areas so the record keeping is poor. The professionals should be encouraged to work and live in these areas to see to the proper management of health facilities and record keeping.*

KEYWORDS: *Congenital malformations; Record keeping; Hospitals; Central part of Cross River State.*

I. INTRODUCTION

Congenital disorder is any medical condition that is present at birth. However, a congenital disorder can be recognized before birth (prenatally), at birth, years later, or never. The term congenital does not imply or exclude a genetic cause [1] Congenital disorders can result from genetic abnormalities, the intrauterine environment, a mixture of both, error of morphogenesis, or unknown factors. Congenital anomaly is considered to be multifactorial or polygenic in origin when there is combine influence of a number of genetic and environmental factors that interfere with normal embryonic development. Multifactorial inheritance has been found to be the underlying etiology of most of the common congenital anomalies [1]. There seem to be a "multifactorial" cause for 20-25% of anomalies. The cause of 40 – 60% of congenital physical anomalies in human is unknown; these are known as sporadic birth defects, a term that implies an unknown cause, random occurrence regardless of maternal living conditions and a low recurrence risk for future children [2].

Environmental factors such as air pollution and proximity to hazardous waste sites have recently been reported to increase risk of structural birth defects and chromosomal abnormalities [3-4]. Other physical environmental factors such as, drugs, infections from the mother and maternal pesticide exposure have also been implicated [5]. Treatment and rehabilitation of children with congenital malformation is costly and complete recovery is usually impossible [6-7].

These local government areas are situated far from the State Capital, Calabar. The inhabitants are mostly farmers, hunters and traders. Most of the educated members of these communities live in towns and cities. Many of the pregnant women in these areas do not go to hospitals; they prefer to attend traditional birth homes. The traditional homes are cheaper compared to the government hospitals.

This research work was designed to study the incidence of congenital malformation in General hospital Obubra, General Hospital Ugep, Holy Family Joint Hospital Ikom and Eja Memorial Joint Hospital, Itigidi.

II. MATERIALS AND METHODS

The data were obtained from the record office of the maternity section of the General hospital, Obubra, General Hospital, Ugep, Holy Family Joint Hospital Ikom and Eja Memorial Joint Hospital, Itigidi located in the Central Part of Cross River State in Nigeria from 1992 to 2005. The hospital files containing records of congenital malformation, the yearly birth records containing the number of children born each month in various wards in the maternity sections were the only source of information. The total number of births for the period of

study was strictly noted and recorded. Malformations were grouped systematically. The number of cases in each system was noted; percentages and incidences per 1000 birth were calculated and presented in tables.

III. RESULTS

From 1992 to 2005, a period of 13 years, the hospitals studied recorded 2,932 births. Out of these number of births, 22 (0.75%) were congenitally abnormal.

Table 1: Showing the total births in each hospital and low birth weight

No of birth / anomalies / low birth weight	Holy Family Joint Hospital, Ikom	General Hospital Obubra	General Hospital Ugep	Eja Memorial Joint Hospital	Total no. of anomalies and low birth weight.
Total no. of birth	1,289	848	453	342	2,932
No. of anomalies and %	4	9	1	8	22 (0.75%)
Low birth weight and %	391	124	111	280	906 (30.9%)

The highest number of anomalies 8 (36.37%) with incidence of 2.73 per 1000 birth was associated with the central nervous system. Gastrointestinal tract and skeletal system accounted for 7 (31.83%) and 4 (18.19%) cases with incidences of 2.39/1000 and 1.36/1000 births respectively. Anomalies of cardiovascular system and urogenital system were 1 (4.555) and 2 (9.09%) with incidences of 0.34/1000 and 0.68/1000 births respectively.

Table 2: Showing prevalence of congenital anomalies in systems

Systems	Types of anomalies	No. of Malformation Recorded	Percentages (%)	Total no. Recorded	Total %
Central Nervous System	Spina bifida	2	9.09	8	36.37
	Hydrocephalus	4	18.18		
	Anencephaly	1	4.55		
	Hydrocoele	1	4.55		
Cardiovascular system	Congenital heart defect	1	4.55	1	4.55
Gastrointestinal tract	Duodenal	1	4.55	7	31.83
	Tracheoesophageal Fistula	4	18.18		
	Hepatosplenomegaly	1	4.55		
	Esophageal stenosis	1	4.55		
Urogenital system	Congenital hernia	2	9.09	2	9.09
Skeletal system	Syndactyly	1	4.55	4	18.19
	Polydactyl	3	13.64		

Table 3: Showing congenital anomalies, percentages and incidences per 1000 births in systems

Systems	Types of anomalies	No. of Malformation Recorded	incidences per 1000 births in systems	Total incidences per 1000 birth in systems
Central Nervous System	Spina bifida	2	0.68	2.73
	Hydrocephalus	4	1.36	
	Anencephaly	1	0.34	
	Hydrocoele	1	0.34	
Cardiovascular system	Congenital heart defect	1	0.34	0.34
Gastrointestinal tract	Duodenal	1	0.34	2.39
	Tracheoesophageal Fistula	4	1.36	
	Hepatosplenomegaly	1	0.34	
	Esophageal stenosis	1	0.34	
Urogenital system	Congenital hernia	2	0.68	0.68
Skeletal system	Syndactyly	1	0.34	1.36
	Polydactyl	3	1.02	

IV. DISCUSSION

Congenital malformations continue to remain a major concern to expectant women and researchers. This research work reports among others a high incidence (30.9%) of low birth weight babies. Though some researchers do not classify low birth weight among congenital malformation, low birth weight has been defined as weight less than 2,500g (up to and including 2,499g) [8]. Black infants have been reported to have a higher incidence of low birth weight 8.4% against white infants 3.6% [9].

Low birth weight is mostly caused by environmental factor such as the nutritional status of the pregnant mother. Ibrahim [10] stated that low birth weight though associated with under age mothers and repeated pregnancy is mainly a consequence of malnutrition in babies whose mother's nutritional level is very low. In our area of study, the women are mostly farmers. They spend most of their time in the farm and processing of their farm products for sale. They hardly eat and rest when they are pregnant. Due to poverty, they hardly eat balance diet. They also drink herbal concoctions when they are sick even in pregnancy. The constituents of these concoctions are hardly known. It could interfere with the growth of the fetuses and even cause congenital defects.

This is in line with the report that physically demanding work during pregnancy contributes to poor fetal growth. Mothers in deprived socio-economic condition frequently have low birth weight infants and these may stem primarily from the mothers poor nutrition and health over a long period of time [11].

The high incidence of the CNS may be attributed to deficiency of folic acid. The diet of women in the area of study consists mainly of starchy food such as yam and cassava products. A deficiency of folic acid has been implicated in malformation of the central nervous system. Spinal bifida is a common congenital malformation in humans that is often a synonymous with neural tube defect (NTD). Exposure of chick embryo to platelet derived growth factor receptor (PDGFR) inhibitor imatinib mesylate resulted in spina bifida in the closeness of NTDs [12]. Disruption of PDGFR (alpha) - initiated P13K activation and migration of somite derivatives leads to spinal bifida. Consumption of folic acid before and during early pregnancy can prevent NTD [13].

Garne et al [14] reported that the most frequent types of cerebral malformations were microcephaly and hydrocephalus. The most frequent groups of non-cerebral malformation were cardiac, facial clefts and limb and skeleton malformation. In this study, the most frequent of cerebral group was hydrocephalus and the most frequent of non-cerebral malformation was the skeletal system malformation. Analysis of congenital defects in a population of 90921 singleton births revealed a strong interrelation between malformations; for example, 84% of lung defects, 70% of kidney defects, 19% of cleft palate, and 15% of spina bifida which could not be designated as subsequently derived structural changes [15].

Another importance and possible cause of malformations in this area is infections. This may be from unsafe drinking water available to them or from unclean and unhealthy lifestyle practiced by the women. The state of good drinking water in the area of study is poor. The area is known for high incidences of oncochiasis. Chamberlain and Thumbull [16] reported that viruses that colonize the female genital tract cross over from there through the placenta to infect the fetus.

Lack of good and affordable health care encourages pregnant women to resort to patronage of traditional birth attendants who give them herbal drugs and concoction at unknown doses. This certainly may affect the developing fetuses. Some of these resort to self medication and ingest unperscribed drugs especially anti-malaria drugs. Many do not predispose themselves to antenatal clinics where they could have been advised against indiscriminate use of drugs during pregnancy. It has been documented that non-prescription drug such as clobutinal cough syrup can be a potential risk for patients who are also using other pharmaceutical preparation or having concomitant disease. This is because such drug may cause harmful interactions, most of the previously unknown [17].

This study has shown a high incidence rate of congenital malformations of the central nervous system 2.73%. Other studies in parts of the world show prevalence figures: 3.11% in Atlanta, USA [18], 1.28% in India [19], 2.02% in Spain [20], 2.7% in Bahrain [21], 3.17% in Egypt [22]. In the study of congenital malformation done at a referral hospital in Gorgan, Islamic Republic of Iran in 1998-99, anomalies of musculoskeletal system had the highest incidence (0.38%), followed by the central nervous system (0.28%) and genitourinary system (0.25%) [23].

The total number of recorded births in the area of study was low compared to the population in the area (over one million). Thus, this clearly indicates that many of the pregnant women do not avail themselves in the hospital for antenatal checkup. They may be making use of traditional birth centers (TBC). We suggest that the traditional birth attendants (TBA) should be educated on the causes of congenital birth defects and the need for keeping records of abnormal births in their centers.

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