

## **Congenital anomalies in a State Specialist Hospital; A Secondary Level of Healthcare.**

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**Background:** *we set out to look at the pattern of congenital anomalies at the point of birth and see if there are identified predisposing factors.*

**Methods:** *This was a Hospital based cross sectional study of babies delivered at the Labour ward of the State Specialist Hospital Akure from March to September 2012. The babies were examined for external Congenital anomalies after delivery. Information was collected on the patient as well as the parents with a structured proforma with a view to looking for associated factors.*

**Results:** *over the 6 months of this study, there were 1551 babies; 765 were males and 786 were females. Twenty two babies were delivered with external congenital birth defects. Among the babies with congenital anomalies 15 were males while 7 were females with M: F 2:1. Twenty one (95.5%) was delivered by spontaneous vaginal delivery, only one patient had Caeserian section. All with known gestational age 20 (91%) were delivered at term. Congenital talipes equinovarus and polydactyly were the 2 most frequent external congenital anomalies. Family history of congenital anomaly, fever in pregnancy and maternal obesity were associated risk factors in 7 of the patients. Six (27.3%) of the babies with deformities were delivered to mothers age  $\geq$  35years.*

**Conclusion:** *Polydactyly and Congenital talipes equinovarus were the 2 most common external birth defects seen in this study. Male babies were twice more affected compared to their female counterparts.*

**Key Words:** External Birth Defect, Labour Ward, Secondary Level of Healthcare.

### **Introduction**

There is scarcity of reports on congenital anomalies in Sub-Saharan Africa<sup>1</sup>. Published studies have reported variations in the pattern and epidemiology in different regions and even in different zones of the same state<sup>2,3</sup>. The reports also show variations in the methodology of the studies<sup>4</sup>. Previous work done by Orimolade et al<sup>5</sup> at the Obafemi Awolowo University Teaching Hospital, Ile-Ife; a referral tertiary hospital center was a retrospective study of all cases of documented congenital anomalies in the Hospital over the period of the study using clinic and ward records. The data were inclusive of babies delivered in the hospital with congenital anomalies and babies with congenital anomalies referred from neighbouring towns and states to seek specialist care in the hospital. Being a retrospective study, some vital information was absent.

Bakare et al<sup>2</sup> did a community based study in Ife –Ijesa Zone looking at the epidemiology of external birth defects in neonates delivered in 12 randomly selected hospitals in the 6 local government areas of Ife-Ijesha zone of Osun state and reported their findings. The results showed variations in data recorded in different areas of the same state.

In this study, the state specialist hospital Akure, a secondary health care centre and one of the hospitals aided by the Ondo State government to provide obstetric care nearly free of cost to the populace was used. The hospital receives patients from Akure and the surrounding villages; this setting was considered better than a tertiary center for the study of external birth defects seen

in the environment. The aim of this study was to look at the pattern of congenital anomalies in the babies delivered in the hospital and see if there are identified predisposing factors.

### Patients and Methods

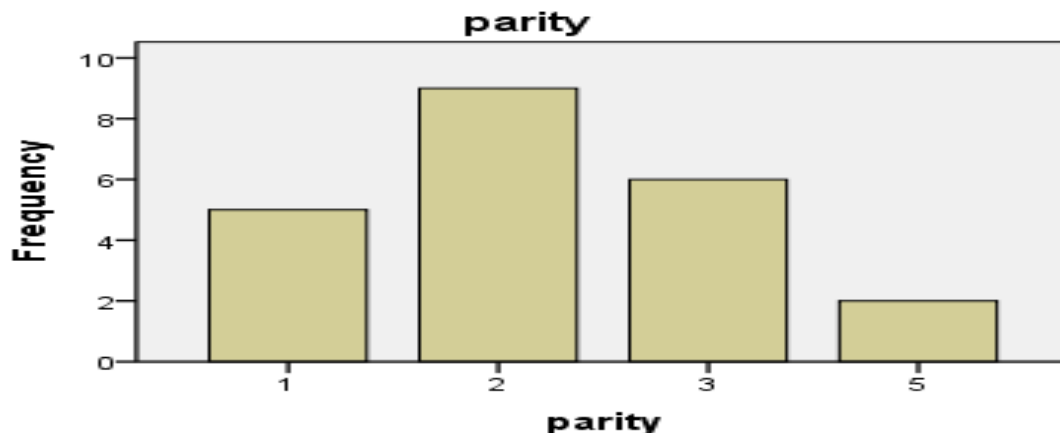
This was a hospital based cross sectional observational study of babies delivered at the Akure state specialist hospital Ondo state from March 2012 to September 2012. The hospital is a secondary healthcare facility located in Akure, a state capital of Ondo state, and receives patients from surrounding towns and villages in the south western part of Nigeria. The hospital serves both urban and rural populations and obstetric care is provided at minimal cost. All the babies delivered in the Labour ward of the hospital were transferred to the post-natal Ward with the mother for observation and if necessary further care before discharge. The babies delivered were examined for external birth defects (gross congenital anomaly). Those identified with birth defects were entered into a proforma seeking more information about the baby and the parents. Some of the information retrieved on the babies included; gender, birth weight, gestational age at delivery, mode of delivery, diagnosis or description of the anomaly and the system involved. The mothers' demographic characteristics were obtained as well as the obstetric history with interest in identifying any predisposing factor such as family history, use of drugs, maternal diabetes mellitus, maternal obesity, consanguinity, alcoholism, cigarette smoking, and exposure to teratogens such as irradiation, drugs and viral infections.

Descriptive statistics was conducted and the results were presented with table and charts.

### Results

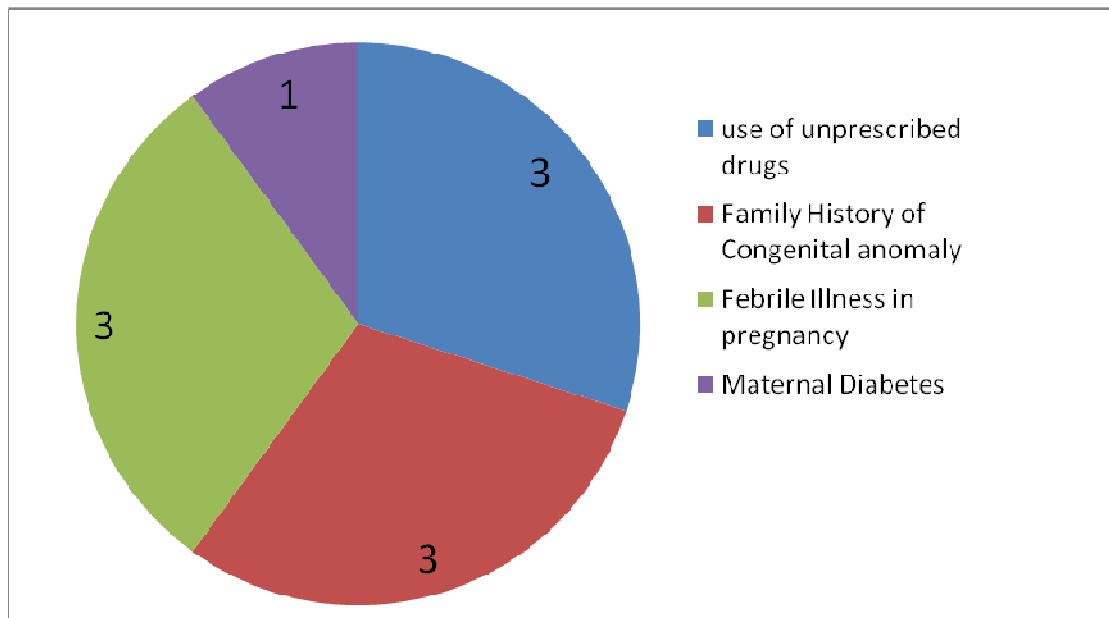
Over the 6 months period of this study, 1551 babies were delivered. Male babies were 765 while 786 were females with a M: F ratio of 1:1. Twenty two babies were delivered with congenital external birth defects over this period giving an incidence rate of 1.4%. Among the babies with congenital anomalies 15 were males while 7 were females with M: F 2:1. The patients were mainly Yorubas in ethnicity 19 (86.4%). The mode of delivery of the babies with defects was by spontaneous vaginal delivery in 21(95.5%), only one patient had caesarean section. Twenty (91%) of the mothers delivered at term, the gestational age was not known in 2 cases. The mean birth weight of the babies with defects was  $3.3 \pm 0.6$  kg. The age of the mothers of babies with birth defect ranged from 18years to 42 years with an average of  $31 \pm 5$  years. Six (27.3%) of the mothers were older than 35 years.

**FIG. I SHOWING PARITY OF MOTHERS OF THE AFFECTED BABIES**



**Table 1.** Identified External Birth Defects with Their Frequencies

Type of Anomaly	Frequency
Club foot	5
Polydactyly (1had polysyndactyly)	5
Syndactyly	3
Metatarsus adductus	2
Tibia hemimelia	1
Bil Radial Deficiency with absent thumb	1
Camptodactyly	1
Spinal bifida (Meningocele)	1
Anencephaly	1
Torticollis with haemangioma	1
Transverse absence of the hand (rudimentary distal phalanges on the metacarpals)	1
Bilateral cleft foot	1
Omphalocoele major with Polydactyly	1



**Figure 2.** Associated Risk Factors in the Mothers of the Babies with External Birth Defect

We also looked at the parity of the mothers of the affected babies; the result was represented in Figure 1. Twenty four external birth defects were identified in 22 babies; the spectrum of the deformity seen was represented in Table 1. The only case of spinal bifida observed in this study was not associated with club foot.

Congenital talipes equinovarus and polydactyly were the 2 most frequent external congenital anomalies. All the patients with clubfoot had the idiopathic variety. The only patient with spina bifida (Meningocele) had no foot deformity. We also sought to discover if there were associated risk factors in the mothers of babies with anomalies. Ten associated risk factors were identified

in 7 mothers while none was identified in the remaining fifteen. The risk factors identified are shown in Figure 2.

Family history of congenital anomaly, Use of unprescribed drugs, fever in pregnancy and maternal obesity were associated risk factors in 7 of the patients. None of the mothers of babies with birth defects were smokers or drank alcohol also none of the babies with birth defect has consanguineous parents.

### Discussion

The study showed a prevalence rate of 1.4% of congenital external birth defects amongst the population served by the State Specialist Hospital Akure. There is male preponderance of patients with external birth defect in a ratio of 2:1. This is in agreement with previous studies on this subject<sup>2,5,6</sup>. A study in Iran by Karbasi et al<sup>3</sup> and Tomatir et al<sup>4</sup> in Turkey however did not observe any gender difference in the incidence of birth defect.

Most of the observed deformities were in the musculoskeletal system. Talipes equinovarus and polydactyly were the most common external birth defect seen in this study. Similar observation has been made in previous studies<sup>2, 3,5</sup>. One patient had spina bifida. Although the total number of babies with birth defects was low due to the short duration of the study, we did not observe the high prevalence of spina bifida in patients with club foot reported from Ile-Ife by Orimolade et.al<sup>5</sup> This may be due to the inclusion of referred cases of congenital anomaly in the earlier study and the fact that the study was done in a tertiary referral centre with different methodology.

Some studies recorded a high rate of Caesarian section as a mode of delivery among babies with congenital anomalies; this was not the case in this study as only one baby was delivered by Caesarian section. A lower incidence of congenital anomalies has been reported in term babies compared with preterm babies. Jahangir et.al in a study in Pakistan observed a 5 fold increase in the prevalence of birth defects among preterm babies than in babies delivered at term. In this study all the babies who have birth defect were delivered at term, this may contribute to the normal mean birth weight of  $3.3\pm 0.6$  kg observed among the babies and a relatively low prevalence of abnormalities.

Older maternal age  $\geq 35$  years have been associated with increased incidence of congenital birth defect<sup>8</sup> In this study, 27.3% of the mothers who had babies with birth defects were 35 years and above. The average age of the mothers of babies with birth defects in this study was 31 years.

The associated risk factors in the mothers of babies with defects included family history of congenital anomaly especially in patients with polydactyly, the use of unprescribed drugs, febrile illness in pregnancy and maternal diabetes in one patient. Consanguinity which was reported in some studies<sup>4,7</sup> as a cause of congenital anomaly is not a common practice in our environment.

### Conclusion

Polydactyly and Congenital Talipes equinovarus were the 2 most common external birth defects seen in this study. Male babies were twice more likely to be affected than their female counterparts. Family history of congenital anomaly, use of unprescribed drugs, febrile illness in pregnancy and maternal diabetes mellitus were observed in some of the mothers who had babies with birth defect.

### Limitation of the study

The duration of the study was short and similar studies conducted over a longer period are needed and will be pursued.

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