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Hospital Based Birth Defect Surveillance in a Tertiary Care Centre

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ABSTRACT

According to WHO in 2010, an estimated 270000 deaths globally were attributable to congenital anomalies during first 28 days of life. In an effort to decrease the number of congenital anomalies worldwide, 63rd the WHO adopted a birth defects resolution. The aim was to prevent congenital anomalies and raise awareness about their effects. Hospital based surveillance was implemented in India in collaboration with WHO. Institute of Maternal and Child Health (IMCH), Govt. Medical College Kozhikode was selected from the state of Kerala. Aim of this study includes, monitor and detect clusters (outbreaks) of congenital anomalies among a defined population and refer affected infants to appropriate services in a timely manner. Out of 15519 live births and 409 still births during the period of one year from November 2015 to 2016, there were 123 newborns with selected external congenital anomalies.

Key words: Congenital anomalies, Birth Defect, surveillance, Tertiary care centre

Introduction

Congenital anomalies occur in a significant number of newborns. Neural tube defects were the most serious one and relatively common which is also preventable (1). Congenital anomaly is defined as abnormalities of body structure or function that are present at birth and are of prenatal in origin (2).Congenital anomalies can be external and internal (3).Many of the cases could be identified even with externally visible malformations (4). When establishing a new congenital anomalies surveillance programme, the initial anomalies that are included can be limited to structural anomalies that are readily identifiable on physical examination (5,6,7). Selected external major congenital anomalies are anencephaly/ cleft lip/ cleft palate/ cleft palate with cleft lip/ craniorachischisis/ encephalocele/ exomphalos/ omphalocele/ gastroschisis/ hypospadias/ inencephaly/ reduction defect of limbs/ spina bifida/ talepesequinovarus.

Population based surveillance capture population that is resident in a defined geographical area. Hospital based surveillance capture birth outcomes that occur in selected hospitals.

Aims of the present study include, monitor the trends in prevalence of different types of congenital anomalies among a defined population, to detect clusters (outbreaks) of congenital anomalies and to refer affected infants to appropriate services in a timely manner.

Materials and Methods

This is an observational study done in newborn babies born at IMCH Government Medical College, Kozhikode. This study is part of WHO hospital based surveillance programme for birth defects in India. IMCH Medical College Kozhikode is selected as the study hospital in Kerala. As this study is part of WHO surveillance programme, separate ethics committee clearance was not required.

All live births and still births that are born in IMCH are included in this study regardless of maternal residency. For data collection, health care professionals in key areas were given training to identify congenital anomalies as per protocol given by WHO. Training was also given for ICD coding. Photographs of neonates with congenital anomalies were taken. Photographs and ICD coding were verified by senior medical officer. Information then send to national level surveillance programme.

A surveillance personnel (JPHN) is entrusted to conduct the surveillance. She visits all areas of hospital where potential foetus or neonate with congenital anomalies can be identified (labour unit, operation theatre, NICU,

postnatal wards). Junior residents are also informed to report cases to surveillance personnel as and when occur. Once case reported, verification and ICD coding is done by senior medical officer.

The period of study was one year from November 2015 to 2016. This study is now continuing for another period. There were a total number of 15928 babies born in IMCH during this period of one year.

Results

Out of 15928 new born babies studied (15519 live births, 409 still births) for selected congenital anomalies, 123 newborns had selected congenital anomalies.

Table 1: Details of selected external congenital anomalies (8,9,10, 11)

Selected external congenital anomaly	Description	ICD coding	Total number
Anencephaly	Anencephaly	Q00.0	2
Craniorachischisis		Q00.1	0
Inencephaly		Q00.2	0
Encephalocele	Encephalocele parietal	Q01.80	1
Spina bifida	Lumbar spina bifida without hydrocephalus	Q05.2	2
	Lumbar/Lumbosacral spinabifida without hydrocephalus	Q05.7	6
	Sacral spinobifida without hydrocephalus	Q05.8	2
	Cleft hard palate	Q35.1	1
Cleft palate	Cleft soft palate	Q35.3	2
	Cleft hard palate with cleft soft palate	Q35.5	1
	Complete cleft palate, cleft hard and soft palate	Q35.59	1
	Unilateral cleft lip	Q36.90	9
Cleft lip	Cleft hard palate with bilateral cleft lip	Q37.0	3
Cleft palate with cleft lip	Cleft hard palate with cleft lip, specified as unilateral	Q37.10	2
	Cleft hard palate and soft palate with bilateral cleft lip	Q37.4	4
	Cleft hard palate and soft palate with unilateral cleft lip	Q37.5	7
	Hypospadias, balaniccoronaglandular	Q54.0	8
Hypospadias	Hypospadias , penile (sub coronal)	Q54.1	7
Talepesequinovarus.	Talipesequinovarus	Q66.0	55
	Talipescalcaneovalgus	Q66.4	5
Reduction defect of limbs	Congenital absence of both forearm and hand	Q71.2	1
	Congenital absence of hands and finger(s)	Q71.3	1
	Congenital absence of finger(s), remainder hand intact	Q71.30	1
	Reduction limb defect unspecified	Q71.9	1
Exomphalos / omphalocele	Exomphalos/ omphalocele	Q79.2	1
Gastroschisis	Gastroschisis	Q79.3	0

Discussion

Out of 15519 live births and 409 still births during the period of one year, there were 123 selected external congenital anomalies. Talipesequinovarus predominated the external congenital anomaly (67.65%). Cleft palate with Cleft lip (19.68%), Hypospadias (18.45%), Spina bifida (12.3%), Cleft lip (11.07%), Cleft palate (6.15%), Talipescalcaneovalgus (6.15%), Reduction limb defect (4.92%) Anencephaly (2.46%) Encephalocele (1.23%), Exomphalos (1.23%).

Conclusion

Congenital birth defect is a common problem in North Kerala. The high incidence in IMCH Medical College Calicut is probably due to being an apex referral institute of North Kerala. This also indicates the necessity of tertiary care pediatric surgery setup in IMCH to tackle the high incidence of birth defect and to provide early intervention. Neural tube defect which is preventable by antenatal folic acid occurred in12.3% cases.

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Figure 1: Details of selected external congenital anomalies