CODEN [USA]: IAJPBB ISSN: 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES

http://doi.org/10.5281/zenodo.3569655

Available online at: http://www.iajps.com Research Article

ANALYSIS OF TRENDS AND FREQUENCIES OF CONGENITAL ANOMALIES IN A TERTIARY CARE HOSPITAL

Dr Wajeeha Syed[1], Dr Sonia Rafiq[1], Dr Najma Hassan[2]

[1]Assistant Professor Gyne Department Lady Reading Hospital, Peshawar

[2]Resident OBGYN Lady Reading Hospital, Peshawar

Abstract:

Introduction: *Human evolution from a single cell, 'zygote' to a multi cellular organism, is an intricate and a complex process.* ***Aims and objectives:*** *The main objective of the study is to analyse the trends and frequencies of congenital anomalies in a tertiary care hospital.* ***Material and methods:*** *This cross sectional study was conducted in Gyne Department Lady Reading Hospital, Peshawar during September 2018 to March 2019. All the babies born with congenital anomalies during this period were included. All still borns were excluded from this study. The new borns were examined and assessed systematically for the presence of congenital anomalies.* ***Results:*** *Foetal anomalies are significantly associated with consanguinity. Overall, incidence of congenital anomalies was 3.8%. Highest incidence of CNS anomalies observed. Total 5 anencephaly were noted in the observation. These are the overall findings which were observed in the present study.* ***Conclusion:*** *It is concluded that the prevalence and types of congenital anomalies seen in our locality. Regular antenatal visits and prenatal diagnosis are recommended for prevention, early intervention and even planned termination, when needed.*

Corresponding author:

Dr Sonia Rafiq,

Assistant Professor Gyne Department Lady Reading Hospital, Peshawar.

QR code

Please cite this article in press Sonia Rafiq et al., ***Analysis Of Trends And Frequencies Of Congenital Anomalies In A Tertiary Care Hospital.,*** *Indo Am. J. P. Sci, 2019; 06(12).*

INTRODUCTION:

Human evolution from a single cell, 'zygote' to a multi cellular organism, is an intricate and a complex process. Lucky are those foeti which travel through this wonderful journey without encountering any hindrance. The birth of a malformed baby is an unfortunate event for any family and equally for the society too [1]. Influence of teratogens in the form of pathogens, extensive use of chemicals, causes of environmental pollution and use of drugs by the mothers indiscriminately in their day to day life, have resulted in an increased incidence of congenital abnormalities in the newly born children. Congenital anomalies are the vital causes for prenatal mortality and morbidity [2]. Therefore, an antenatal diagnosis and foetal therapy have attained importance in the field of human embryology. According to Dolk, "Environmental factors include any non genetic factor that increases the risk of a birth defect for the exposed individual. Such factors are nutritional excesses or deficiencies (e.g. folic acid), maternal illnesses or infections (e.g. diabetes, rubella) [3], drugs which are taken during pregnancy (e.g. thalidomide), chemical exposure in the workplace or home (e.g., to solvents or pesticides) and radiation (e.g., medical X–rays)." Scientific literature is interested in the association between congenital anomalies and the possible role of chemical contaminants [4], and foetuses are thought to be a further subgroup of the population who could be vulnerable to the effects of air pollutants [5].

Congenital anomalies are major disorders currently affecting countries around the globe. Every year an estimated 7.9 million children are born with a serious birth defect, 3.3 million children (under five years) die from birth defects, and 3.2 million who survive may develop a disability later in the life. This large number indicates the necessity of preventive measures. These anomalies are preventable in 60% of cases [6]. The causes of congenital malformation include genetic, environmental or unknown. In genetic causes, abnormalities in chromosomes accounts for 6%, disorders in single gene accounts for 25% and 20-30% are multifactorial. Unknown etiology is responsible for 50% of cases [7].

Aims and objectives

The main objective of the study is to analyse the trends and frequencies of congenital anomalies in a tertiary care hospital.

MATERIAL AND METHODS:

This cross sectional study was conducted in Gyne Department Lady Reading Hospital, Peshawar during September 2018 to March 2019. All the babies born with congenital anomalies during this period were included. All still borns were excluded from this study. The newborns were examined and assessed systematically for the presence of congenital anomalies. Diagnosis of congenital anomalies was based on clinical evaluation of newborn babies by the pediatrician and other appropriate investigations such as radiography, ultrasonography, echocardiography and chromosomal analysis etc., System wise distribution of the anomalies was performed. For each case, a detailed antenatal and maternal history including the age of the mothers, parity or the history of consanguinity were obtained by reviewing the maternal and labour ward records and by interviewing the parents. A marriage has been considered consanguineous, when that is found to have occurred between a male and a female who are blood-related, e.g., between brother and sister, between 1st cousins etc.

Statistical analysis

Data was entered into excel data sheet and appropriate statistical analysis was performed. Proportion was calculated and the association was tested with Chi-square test and Fisher′s exact test.

RESULTS:

Foetal anomalies are significantly associated with consanguinity. Overall, incidence of congenital anomalies was 3.8%. Highest incidence of CNS anomalies observed. Total 5 anencephaly were noted in the observation. These are the overall findings which were observed in the present study.

Table 01: Distribution of fetal anomalies in accordance with consanguinity

Total No cases	Without fetal anomalies	With fetal anomalies	p-value
Second trimester	11	10	<0.05
Third trimester	7	9	<0.05
Total	18	19	<0.05

Table 02: Association between congenital anomalies and maternal and perinatal risk factors

Variable	Groups	Congenital anomaly					
		Yes		No		Total	χ^2 value, df, *P* value
		No.	%	No.	%	No.	
Maternal age	<20 years	83	1.9	4326	98.1	4409	3.69, df=2, *P*=0.157
	20-30 years	174	2.4	7004	97.6	7178	
	>30 years	29	2.2	1280	97.8	1309	
Parity	Primiparas	171	1.8	9185	98.2	9356	23.91, *P*=0.000*
	Multiparas	115	3.3	3425	96.7	3540	
Consanguinity	Present	2	40	3	60	5	*P*=0.000*
	Absent	284	2.2	12607	97.8	12891	
Birth weight	Very low	14	0.8	1756	99.2	1770	94.17, df=3, *P*=0.000*
	Low	206	3.8	5489	96.2	5495	
	Normal	51	1.3	3747	98.7	3798	
	High	15	0.8	1818	99.2	1833	
Mode of delivery	Vaginal	205	2.5	8042	97.5	8247	7.58, *P*=0.005*
	Caesarean	81	1.7	4568	98.3	4649	
Gestation	Term	90	1	8356		8446	149.83, *P*=0.000*
	Preterm	196	4.4	4254		4450	
Gender	Male	191	2.9	6428	97.1	6619	27.97, *P*=0.000*
	Female	95	1.5	6182	98.5	6277	

*Statistically significant

DISCUSSION:

In the present study, the prevalence of congenital malformations in the newborns were 2.22%, which is comparable with the earlier studies from India, which reported incidence of 2.72% and 1.9%. There are other reports from different parts of the world representing different frequency of congenital malformations [8]. Although we got nearly the same result as reported in other studies, the prevalence of congenital anomaly would have been more than the present rate, if we could have included the abortions and stillbirths. Tertiary care hospital usually do not have definite catchment area and complicated cases are more commonly encountered. Hence, prevalence calculated in this type of hospital-based study cannot be projected to the total population [9]. Community based study should be ideal for true estimation of incidence of congenital anomalies in a population [10].

With regard to pattern of congenital anomalies in the study, the most common system involved was musculoskeletal system (33.2%), followed by gastro-intestinal tract (GIT) (15%), CNS (11.2%), genitourinary (10.5%), cardiovascular system (9.1%), skin (8.7%) etc., This was comparable with studies conducted by others [11]. Some studies however recorded higher incidence of CNS malformations followed by GIT and musculoskeletal system, whereas Suguna Bai *et al*. reported GI malformations as the most common one [12].

CONCLUSION:

It is concluded that the prevalence and types of congenital anomalies seen in our locality. Regular antenatal visits and prenatal diagnosis are recommended for prevention, early intervention and even planned termination, when needed.

REFERENCES:

1. Dolk H, Loane M, Garne E. The prevalence of congenital anomalies in Europe. Adv Exp Med Biol. 2010;686:349–64.
2. Perera FP, Jedrychowski W, Rauh V, Whyatt R. Molecular epidemiologic research on the effects of environmental pollutants on fetus. Environ Health Perspect. 1999;107(suppl):451–60.
3. Tayebi Naeimeh, Yazdani Katayon, Naghshin Nazila. The Prevalence of Congenital Malformations and its Correlation with Consanguineous Marriages. OMJ. 2010;25:37–40.
4. Ogunyemi, et al. Prenatal diagnosis of fetal anomalies in a regional tertiary center: the role of a maternal fetal medicine unit a review of 6,877 deliveries. J Matern Fetal Med. 2000 Jul-Aug;9(4):219–23.
5. Rashid SQ. A study of fetal anomalies detected by ultrasound in Bangladesh and their relative frequencies. J R Soc Health. 2002 Mar;22(1):55–57.
6. Tripale P, et al. Two-statge ultrasonography in screening for fetal anomalies at 13 14 and 18-22 weeks of gestation. Acta Obstet Gynecol Scand. 2004 Dec;83(12):1141–46.
7. Nakling J, et al. Routine ultrasound screening and detection of congenital anomalies outside a university setting. Acta Obstet Gynecol Scand. 2005 Nov;84(11):1042–48.
8. Salvador J, et al. Increasing detection rates of birth defects by prenatal ultrasound leading to apparent increasing prevalence.Lessons learned from the population-based registry of birth defects of Barcelona. Prenatal Diagn. 2005 Nov;25(11):991–96.
9. Sonka Ap, et al. Screening for major structural abnormalities at the 11-to-14-week ultrasound scan. Am J Obstet Gynecol. 2006 Feb;194(2):393–96.
10. Becker R, et al. Detailed screening for fetal anomalies and cardiac defects at the 11-13-week scan. Ultrasound Obset Gynecol. 2006 Jun;27(6):613–18.
11. Emilio Antonio Luca Gianicolo. Congenital anomalies among live births in a polluted area. A ten-year retrospective study. BMC Pregnancy and Childbirth. 2012;12:165.
12. Pagnotta G, et al. Antenatal sonographic diagnosis of clubfoot: a six – year experience. J Foot Surg. 1996 Jan-Feb;35(1):67–71.