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Prevalence of the Cleft Lip and Palate among Newborn Babies in Sulaimani Obstetrics and Gynecological Hospital

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Abstract: *The purpose of this study was to investigate the prevalence of orofacial clefts in a Sulaimani newborn population and examine the occurrence pattern with other birth defects in infants with orofacial clefts and associated dead.*
Materials and Methods: *The data of this retrospective study was collected from Obstetrics and Gynecological hospital archive which provided details on the course of pregnancy as well as information regarding the gender and origin of newborns from 2010-2014. The hospital located in the center of Sulaimani City, therefore the data included the newborn of the inhabitants of city center and the around areas.*
Results: *The total number of newborn was 81828, the total number of dead was 1336, total number of congenital anomalies 602, and total number of newborns with cleft lip and palate defects was 98. Among these 602 congenital anomalies, 346 was male and 256 was female. Total number of cleft lip was 12 (11 male and 1 female), cleft palate was 7 (6 male and 1 female) and cleft lip and palate was 18 (13 male and 5 female).*

I. Introduction

Cleft Lip and Palate (CLP) is one of the most prevalent oro-facial deformities and visible birth defects that occur in one out of every 500 to 1,000 live births worldwide (1) it also present with many syndrome condition including dental anomalies (2). It accounts for 65% of all head and neck (3).The prevalence of orofacial clefts varies between and within countries. The estimated incidence of orofacial clefts worldwide is approximately 10 to 22.1 per 10,000 live births (4). According to Canfield et al. (5), the estimated incidence of cleft lip with cleft palate (CLP) in the United States was 10.5 per 10,000 live births and that of CPO was 6.4 per 10,000 live births. A wide range of CLP prevalence, from 2.7 per 10,000 births in Spain to 20.2 per 10,000 births in Japan, was reported by the International Clearinghouse for Birth Defects Monitoring Systems (ICBDMS) in 2009 (6).

The condition may vary from a minor easily correctable cleft to a significant functional and cosmetic disturbance. Even with corrective surgery patients face a lifetime of social and aesthetic challenges. Facial cleft has also been linked to an elevated risk of cancer in later life (7)

Cleft lip with or without cleft palate is considered etiologically distinct from isolated cleft palate. While the first is a manifestation of a disruption of the primary palate situated anterior to the incisive foramen, the latter is a disruption of the secondary palate formation (8). Cleft lip with cleft palate,or without cleft palate is more frequent among male infants.while isolated cleft palate is more frequent among females,Several studies have found that maternal exposure to alcohol smoking, toxic material and certain drugs may increase the risk for facial cleft in an embryo. In addition, maternal age may contribute to the development of cleft. A family history of cleft lip, cleft lip with cleft palate, or cleft palate, is the strongest relative risk for having a baby born with the anomaly (8).

Although the prevalence of orofacial clefts differs between countries and races, the epidemiology of orofacial clefts in Sulaimanihas not been investigated widely. The purpose of this study was to investigate the prevalence of orofacial clefts in a Sulaimaninewborn population and examine the occurrence pattern with other birth defects in infants with orofacial clefts and associated dead.

II. Materials and Methods:

The data of this retrospective study was collected from Obstetrics and Gynecological hospital archive which provided details on the course of pregnancy as well as information regarding the gender and origin of newbornsfrom 2010-2014. The hospital located in the center of Sulaimani City, therefore the data included the newborn of the inhabitants of city center and the around areas.

III. Results:

The total number of newborn was 81828, the total number of dead was 1336, total number of congenital anomalies 602, and total number of newborns with cleft lip and palate defects was 98. Among these 602 congenital anomalies, 346 was male and 256 was female. Total number of cleft lip was 12 (11 male and 1 female), cleft palate was 7 (6 male and 1 female) and cleft lip and palate was 18 (13 male and 5 female) as shown in Table 1 and Table 2. The chi-square statistic is 1.8954. The *p*-value is 0.387623. The result is not significant at $p < 0.05$ for cleft lip and palate, cleft lip only and cleft palate only between male and female. The chi-square statistic is 14.4123. The *p*-value is 0.000742. The result is significant at $p < 0.05$ for the relation between clefts in general and general abnormalities with percentages of death among them.

The data of 2010 showed only 2 newborns with cleft lip among 98, there were no cleft palate alone or cleft lip and cleft palate together. Forty newborns with congenital anomalies were dead.

There was only one newborn with cleft lip among 93, and 7 had cleft lip and palate in 2011. Among these newborns with congenital anomalies, there were 15 dead; one of them had cleft lip and palate.

In 2012, there were three cleft lip, four cleft palate and five cleft lip and palate among 144 newborns. Only one dead was recorded among cleft palate and five among cleft lip and palate. The total dead was 11 among congenital newborns.

The data of 2013 had two cleft lip and three cleft lip and palate. There were 15 dead among 131 newborns with congenital anomalies.

There were 136 newborns with congenital anomalies in 2014. There were four newborns with cleft lip, three with cleft palate and three newborns with cleft lip and palate.

Numbers of the newborns from 2010-2014 was shown in Table 3. The table describes the numbers of live and dead newborns of the four year of the study.

IV. Discussion

Epidemiological studies have investigated the distribution of orofacial clefts in different countries, territories, and races. However, in Sulaimani, because most studies included subjects from a single institution or district, data on the prevalence of birth defects were not reliable. The prevalence of orofacial clefts among Sulaimani population has not been reported thus far. Therefore, this study was accomplished for purpose of gaining data among Sulaimani city and around areas.

This retrospective study showed 6.1% of oral clefts among 602 congenital anomalies. This percentage of the oral clefts was relatively high. Congenital anomalies in newborn babies constituted 602 (0.73%) of the total number of the newborn babies (81828). Of the 81828 newborns, only 0.045% had oral clefts. This percentage is quite lower than CW Lee (8) study that oral clefts constituted 3.86% among 25335 newborn babies and was half of that found by Silberstein (0.10%) among 131,218 live birth (9).

There was 1336(1.63%) dead in 81828 newborn babies, of which there was only one dead with oral clefts among total 37 lived and dead babies with oral clefts. Congenital anomaly was higher in male (55.9%) than female (44.1%). Again, among this 37 newborns with oral clefts, male and female constituted 81% and 19% respectively. This indicates higher percentages of the oral clefts in male comparative to female. There was an also higher percentage of cleft lip and palate (48.6%) than cleft lip (32.4%) and cleft palate (18.9%). In contrary to Lee (8) that found 60.6% cleft lip, cleft lip and palate (40.3) and cleft palate (21.6) respectively.

This study was concentrated on the prevalence of the congenital anomalies among Sulaimani newborn population including oro-facial defects that the data were taken from the hospital archives. Without proper documenting precise history of the pregnant women, it cannot be possible to unveil the causes or determining the possible etiologic factors that may be related. The center for disease control and Prevention stated that, the causes of orofacial clefts among most infants are unknown. Some children have a cleft lip or cleft palate because of changes in their genes. Cleft lip and cleft palate are thought to be caused by a combination of genes and other factors, such as things the mother comes in contact with in her environment, or what the mother eats or drinks, or certain medications she uses during pregnancy.It also stated the possible etiologic factors: smoking (10, 11), diabetes (12) and taking uncertain medicine (13, 14) during pregnancy. Every year observation for these anomalies is mandatory for evaluation the cause and effects of the surrounding environment on the incidence and prevalence of cleft lip and palate and other anomalies.

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Tables

Table 1: Prevalence of oral clefts of newborn babies in Sulaimani City

Clefts	No.	Male	female	No.dead	
Cleft lip & palate	18 (48.6)	13 (72.2)	5 (27.8)	0 (0)	p-value: 0.387623 > 0.05
Cleft lip	12 (32.4)	11 (91.6)	1 (8.4)	0 (0)	
Cleft palate	7 (18.9)	6 (85.7)	1 (14.3)	1 (14.2)	
total	37 (100)	30 (81)	7 (19)	1 (2.7)	

The chi-square statistic is 1.8954. The p-value is 0.387623. The result is not significant at $p < 0.05$.

Table 2: Relation of the oral clefts with other congenital anomalies

abnormality	No.	Male	female	dead	
General abnormalities	565 (93.8)	316 (55.9)	249 (44.1)	97 (17.1)	p-value: 0.000742 < 0.05
clefts	37 (6.1)	30 (81)	7(19)	1 (2.7)	
total	602 (100)	346 (57.5)	256 (42.5)	98 (16.2)	

The chi-square statistic is 14.4123. The p-value is 0.000742. The result is significant at $p < 0.05$.

Table 3: numbers of the dead and live newborn baby of five years archived data

years	Live	dead	total
2010	14667	309	14976
2011	12490	234	12724
2012	16801	281	17082
2013	18441	268	18709
2014	18093	244	18337
total	80492	1336	81828