

## Birth Prevalence of Cleft lip and/or Palate in Hawler City A retrospective Hospital based One year Study

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### ABSTRACT

**Background and Objectives:** The aim of this study was to report the prevalence of cleft lip and/or palate in two hospitals in Hawler city among children born from 1/1/2008 to 31/12/ 2008.

**Methods:** In a retrospective study, birth records of 22387 children from two hospitals (Maternity and Raparin Hospitals) were used to identify all children born with cleft lip and/or palate. Information about prevalence, type of cleft, site, gender, family history, and associated anomalies were investigated.

**Results:** The overall prevalence rate of cleft lip and palate was 0.58 per 1000 births. The prevalence of isolated cleft palate, isolated cleft lip and cleft lip and palate were 0.13, 0.09 and 0.36 per 1000 respectively. Male to female ratio was 1.6:1. Regarding the site of cleft 30.8% was on the right side, 7.7% was on the left side and 61.5% was bilateral. A positive family history was found in 15.4% of the cases and 38.5% of the cases were associated with anomalies.

**Conclusions:** The prevalence rate of cleft lip and palate in Hawler obstetric hospitals during 2008 was lower than that reported in Asians and Europeans, and it was slightly higher than that reported in Africans. Male predominates in all types of clefts. Higher incidence of associated anomalies was observed compared with other studies in different populations.

### INTRODUCTION:

A cleft lip and/or palate are a congenital abnormal space or gap in the upper lip alveolus, or palate. They are the most common serious congenital anomalies to affect the orofacial region. Because they are deformities that can be seen, felt, and heard, they constitute a serious affliction to those who have them<sup>1</sup>. The etiology of cleft is multi-factorial. It involves both genetic and environmental factors such as malnutrition, drugs, alcohol, smoking, infection, and traumatic stress<sup>1-6</sup>. Cleft lip and/or palate is present at different frequencies in different cultures and races as well as countries. On average, about 1 in every 500-750 live births result in a cleft<sup>7</sup>. In the U.S., the prevalence for cleft lip with

palate is 0.22 to 1.17 per 1000 births. Cleft palate alone results in a prevalence rate of 0.55 to 0.66 per 1000 births<sup>8</sup>. One per 2,500 African Americans are born with a cleft<sup>9</sup>. Al Omari et al<sup>10</sup>. examined the prevalence of cleft in Jordan and found an overall rate of 1.39 per 1,000 live births for cleft lip and palate. This was found to be similar with the prior studies that have examined clefting in other Arab populations. The overall prevalence of cleft lip and palate in Iran is 0.97 per 1000 live births<sup>11</sup>. Birth prevalence studies on cleft lip and palate have been carried out in several countries worldwide<sup>10-15</sup>. Alzubaidee et al<sup>16</sup> in a prospective study surveyed 38 primary schools in Baghdad and reported 1:1003 (0.99 per 1000). In another similar study, 61 schools in Baghdad-Alresafa side surveyed and found 1:808 (1.23 per 1000)

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No such studies have been performed in Hawler city; accordingly this study was designed with the intent of providing preliminary birth prevalence data on the incidence of cleft lip and cleft palate in the obstetric hospitals in Hawler city.

**PATIENTS AND METHOD:**

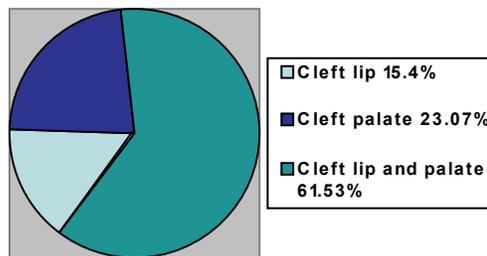
In a retrospective hospital based study birth records of 22387 children, from two hospitals (Maternity and Raparin hospitals), born from 1/1/2008 to 31/12/ 2008 were used to identify all children born with cleft lip and palate. Cases were selected by searching for and identifying the key word “cleft” from all birth records. Information about prevalence, type of cleft (isolated cleft lip, isolated cleft palate, cleft lip and cleft palate), gender, site (right, left), family history, and associated anomalies and syndromes were gathered and analyzed .

**RESULTS:**

The number of cases of cleft lip and/or palate was 13 cases among 22387 live births (0.58 per 1000, 1:1722). The number of isolated cleft palate, isolated cleft lip and cleft lip and palate were, 3 (0.13 per 1000, 23.07%), 2 (0.09 per 1000, 15.4%), and 8 (0.36 per 1000, 61.63%) respectively, Figure 1. Male to female ratio was 8 male and 5 female cases (1.6:1). Regarding the site of cleft lip and/or palate, 4 (30.8%) were on the right side, 1 (7.7%) was on the left side and 8 (61.5%) were bilateral. 2 (15.4%) of the cases have a positive family history. Isolated cleft palate was found in 2 males and 1 female with a ratio of 2:1. No cleft lip found in females. Five (38.5%) of the cases were associated with anomalies, (Table 1).

**Table (1):** Type and frequency of cleft associated anomalies and syndromes.

Associated anomalies and syndromes	Frquency/13
Lobster hand and Micrognathia	1
Club foot	1
Patau syndrome	2
Hydrocephalus	1



**Figure (1):** Distribution of cleft type.

**DISCUSSION:**

Clinical and epidemiologic studies of defined geographic populations can serve as a means of establishing data important for genetic counseling and as a first step in identifying strategies best suited for identification of causes<sup>13</sup>. In this study the overall prevalence of cleft lip and palate was 0.58 per 1000 births. It is less than that reported for the whites<sup>12-18</sup>, Asians<sup>15-22</sup>, and Latin’s<sup>26</sup>. The over all prevalence is similar to that reported in United Arab Emirates<sup>18</sup>, Luxemburg<sup>19</sup>, Malta<sup>19</sup>, USA (Alaska, Illinois and Maryland)<sup>20</sup>, and Sweden<sup>21</sup>. This might be due to similarity in genetic back grounds and possibly socioeconomic status which is of unknown mechanism. Regarding the type of cleft, we have observed that cleft lip and palate is more frequent than the isolated cleft lip and

cleft palate and it is similar to that reported by a number of authors<sup>22,29</sup>. This might also be due to similarity in genetic background and socioeconomic status. The prevalence of cleft lip is 15.4% and it is similar to that reported by Al-Zubaidee et al<sup>30</sup> in Baghdad. The incidence of isolated cleft palate is 23.7% which is less than that reported in Baghdad<sup>30</sup>, Jordan<sup>10</sup> and Iran<sup>11</sup>, but it is similar to that reported in Bulgaria<sup>18</sup>, Bolivia<sup>18</sup>, China<sup>18</sup> and Spain<sup>19</sup>. This might be due to the significant racial difference in the prevalence of cleft lip and/or cleft palate. Regarding gender distribution our study showed male predominance in cases with cleft lip and palate, and isolated cleft lip which was similar to many other international published studies<sup>10-12,14,16,17,30,31</sup>. The reason for male predominance is still under investigation. Unlike many studies<sup>3,5,6,10,12,14</sup> which showed female predominance in isolated cleft palate, in our study we found male predominance that is similar to that reported in a study in Baghdad<sup>30</sup>, and in Nigerians.<sup>32</sup> Regarding the site of unilateral cleft many studies<sup>9-15</sup> reported a left side predominance, but in our study we observed a right side predominance and we found only one author with similar result to our study.<sup>33</sup> The exact cause for this difference is not well known but it could be due to different genetic background specially in this regard, or geographical variation, or number of births.<sup>20</sup> Regarding family history our result showed that 15.4% of the cases have a positive family history, which was similar to that reported in Baghdad<sup>30</sup> and Pakistan<sup>31</sup>. The incidence of anomalies associated with cleft lip and cleft palate varies with different populations. Our result was similar to that reported by Kumar et al<sup>34</sup> and Bonaiti et al<sup>35</sup>. Variations in the results of our study compared with other studies regarding low incidence, male predominance in cleft palate, right side predominance and high rate of associated anomalies and syndromes might be due to different genetic background, ethnic and

## CONCLUSION:

The prevalence rate of cleft lip and palate in Hawler city is lower than that reported in Asians and Europeans, and is slightly higher than that reported in Africans. Male predominates in all types of clefts. Higher incidence of associated anomalies is observed compared with other studies in different populations.

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