FRONTLINE MEDICAL SCIENCES AND PHARMACEUTICAL JOURNAL (ISSN – 2752-6712)
VOLUME 02 ISSUE 04 Pages: 53-62
SJIF IMPACT FACTOR (2021: 5.14) (2022: 5.605)
OCLC – 1272874727 METADATA IF – 6.986
Publisher: Frontline Journals

Journal Website: https://frontlinejournals.org/journals/index.php/fmspj

Research Article

EPIDEMIOLOGICAL FEATURES OF CONGENITAL MALFORMATIONS OF THE MAXILLOFACIAL REGION

Submission Date: April 10 2022, **Accepted Date:** April 17, 2022,
Published Date: April 30, 2022
Crossref doi: https://doi.org/10.37547/medical-fmspj-02-04-08

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ABSTRACT

Analysis of the literature on the study of epidemiological features of maxillary malformations (cleft lip and palate) has shown their wide and widespread prevalence, having a heterogeneous nature depending on one region or another. Research in this direction is undoubtedly relevant and necessary, since it will allow the timely detection and treatment of children with maxillary malformations, which will significantly improve the quality and life expectancy of these patients, leading to their full social adaptation.

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KEYWORDS

Malformations of the maxillary region, cleft lip, cleft palate, prevalence, frequency, quality of life.

INTRODUCTION

Congenital malformations of the maxillofacial region are one of the most important problems of modern dentistry and medicine as a whole worldwide among all human malformations [42].

Congenital malformations of the maxillofacial region are very common pathologies among pediatric population and are characterized by varying degrees of anatomical and functional impairment; they cause difficulties in social adaptation of patients, disability [18], reduction in quality and life expectancy [40, 43], high early mortality (over 300,000 neonates) [1].

In particular, according to the opinions of L. Bamfordetal. (2018) and P. Hlongwa et al. (2019) an important point of their studies, was the study of the causes of mortality in children under the age of five years, which showed an increase in its proportion due to congenital malformations of the maxillofacial region [9, 21]. According to the world statistics of the World Health Organization (WHO, 2017), up to 3.2 million children are born annually with malformations, among which the third place falls on the maxillofacial pathology, with such birth defects as cleft palate and cleft lip accounting for the leading percentage (up to 70%) [7].

Congenital cleft palate and upper lip occur due to the lack of fusion of the frontal-nasal and maxillary processes in the embryonic period, resulting in varying degrees of expression (complete or incomplete) of the hard and/or soft palate, as well as the upper lip [29, 38, 42].

According to the literature, the incidence of cleft lip and palate is 1 in 700 infants, which can be observed as a cleft lip (CL), alveolar area (CA), palate (CP), and the combined involvement of the lip and palate (CLP) [2, 11, 12, 23]. Meanwhile, J.C.Conwayetal. (2015) noted that the prevalence of CLP has differences depending on gender and ethnicity, along with this, and, socioeconomic status of the patient. In particular, CLP and CLP are more common among males than females

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(2:1), while girls have a slightly higher risk of developing SR alone (14). In addition, the review papers of M. Dreise et al. (Africa, 2011), J.A. Freitasetal. (Brazil, 2012), A. Odhiamboetal. (Africa, 2012) and J.J. Cubittetal. (Brazil, 2014) is given that there are no accurate data on the prevalence of these pathologies, since all studies are conducted in certain clinics, without taking into account the statistics for the entire region [15, 17, 20, 33]. For example, in many African countries, due to the lack of systematic active monitoring of morbidity in the population, the epidemiology of diseases is assessed on the basis of data obtained in regional hospitals. The incidence of congenital malformations of the lip and palate in a number of African countries is less than 1 per 1000 newborns: in Ethiopia it is 0.2, in Nigeria it is 0.5, and in Uganda 0.8) [19], whereas in Kenya the rate has increased to 1.7 [13] and in South-East Ghana to 6.3 per 1000 newborns [4, 27].

In a study conducted by S. Mbuyi-Musanzayietal. in 2018. Republic of Congo, reported an incidence of non-syndromic (not genetically determined) CLP of 0.8 per 1,000 newborns [30].

There is evidence of ethnogeographic variation in congenital cleft palate and lip, ranging among African Americans from 0.18 to 0.82, among Mongolians from 0.55 to 2.5, and among Caucasians from 0.69 to 2.35 per 1000 live births. In the United States, the prevalence of congenital cleft lip is 1 in every 1000 live births, while the prevalence of cleft palate is 1 in 2000 live births [13].

The incidence of cleft lip is highest in Native Americans (3.6 per 1000), Asians (2.1 per 1000), and whites (1 per 1000); the prevalence of this disorder is less common in blacks (0.41 per 1000). In contrast, the incidence of cleft lip does not differ among different ethnic groups and occurs in 1:2,000 live births. Cleft lip is more common in boys compared to girls (2 to 1), whereas cleft palate is less common in boys than in girls (1 to 2); this may be due to the fact that the palatal bones close 1 week later in women than in men [28].

According to the results of meth analysis H. Kianifaretal. (2015) in Asia, the incidence of cleft palate per 1000 live births is 1.91 in Pakistan, 1.39 in Jordan, 1.76 in North China, 1.81 in Korea, 1.34 in Japan and 1.5 in Oman [24]. The results of B. Doray et al. (2012) indicate the prevalence of CL, SR and CLP in the male population [16]. However, other researchers report the

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prevalence of these malformations in girls [25]. According to some authors, gender differences in the prevalence of congenital cleft palate and lip may be due to differences in sex hormones, the growth rate of tissues and organs, and differences in fetal mortality between male and female fetuses [6].

There is a very wide range in the incidence of pathology among Asians (0.82 to 4.04 per 1000 live births), an intermediate range among Caucasians (0.9 to 2.69 per 1000 live births), and a low range among Africans (0.18 to 1.67 per 1000 live births) [34].

High incidence rates of orofacial cleft, as high as 1.76 (among Chinese) and 2.68 (among Japanese) per 1000 live births (about 220,000 new cases per year) are reported by E. Allanetal. (2014) [8].Moreover, the authors showed that about 25% of all congenital clefts are isolated CL, while the combined form of CLP is about 45% with a tendency to occur more frequently in boys. In addition, their results showed that unilateral congenital clefts were more common than bilateral ones at a ratio of 4:1, with up to 70% of unilateral clefts occurring on the left side of the face[8].

According to a study by N. Salari et al. (2021) based on metanalysis of 59 studies involving 21,088,517 subjects, the incidence of cleft palate was 0.33 (95% CI: 0.28-0.38), cleft lip was 0.3 (95% CI: 0.26-0.34), and the combination of cleft lip and palate was 0.45 cases (95% CI: 0.38-0.52) for every 1000 live newborns [36].

Retrospective studies conducted in Saudi Arabia by ZiyadAlHammadetal. (2021) from January 2015 to December 2018 among children with various congenital malformations revealed the presence of non-syndromic orofacial clefts in 77% with a predominance in boys (62%). The most common malformation was unilateral cleft lip and palate (34%). The prevalence of associated congenital malformations with orofacial clefts was 41%. The most common congenital malformation was congenital heart disease (35%), mostly occurring in patients with unilateral cleft lip and palate (33%). The prevalence of associated congenital heart disease with orofacial clefts was (19%) (44).

Various epidemiological studies show that if one parent has a cleft, the probability of having a child with a cleft lip and palate is 3.2% and the probability of having a child with an isolated cleft palate is 6.8% [22]. Having a cleft in one parent

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and one child is associated with a 15.8% probability of developing a cleft lip and 14.9% probability of developing a cleft palate in the next child[37]. In the case of one parent with a cleft, the probability of another child being born with a cleft lip and palate is 4.4% and the probability of a child being born with an isolated cleft palate is 2.5% [10].

There is evidence that the overall incidence of cleft lip and palate is about 1 case in 600-800 live births (1.42 per 1000) and isolated cleft palate occurs in about 1 child in 2000 live births[28, 35].

According to L. Medwicketal. (2013) and V. Tarun et al. (2020) the typical percentage distribution of cleft types are: isolated cleft palate - 40%; cleft lip and palate - 45% and unilateral cleft lip - 15%.Moreover, about 20 to 30% of children with birth defects have two or more birth defects [31, 38].

According to a study conducted by C.W.Leeetal. (2015) in South Korea, the prevalence of CP, CL and CLP is 5.57, 2.77 and 2.75 cases per 10,000 live births, respectively [26].

A study byH.J. RezqAlswairkietal. (2019) showed that the prevalence of SR in Egypt is 4 per 10,000 newborns and one of its main causes is maternal passive smoking [35].

In addition to cleft lip and palate, other disorders (speech, hearing, mental development) can be detected in children [41]. Hypoplasia of the maxilla and oral breathing, which reduces salivation, increase paradontal disorders are often found in such children [32, 39].

Thus, analysis of the literature on the study of epidemiological features of malformations of the maxillary region (cleft lip and palate) showed their wide and ubiquitous prevalence, having a heterogeneous nature depending on a particular region. In this regard, it is believed that the differences observed in the incidence of cleft palate and lip may be related to social influences and racial/ethnic factors in different parts of the world, which are more often defined as genetic disorders. Therefore, the overall global prevalence of these pathologies remains unknown. Cleft lip and palate are combined with a number of different dental problems, facial and nasal deformities, the development of feeding, breathing, and hearing problems, which significantly reduce the quality of life of patients.

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REFERENCES

1. Adeyemo WL, James O, Butali A. Cleft lip and palate: Parental experiences of stigma, discrimination, and social/structural inequalities. Ann Maxillofac Surg 2016; 6(2):195–203.
2. Azimov M. I., Shomurodov K.E. A technique for Cleft Palate Repair. Journal of research in health science. Vol. 1, No. 2, 2018, pp. 56-59.
3. Akhme Dov Alisher Astanovich, Rizayev Jasur Alimdjanovich, Sadikov Abdushukur Abdujamilevich, Turayev Alimjan Bakhriddnovich. (2021). The State of Periodontal Tissues in Athletes Engaged in Cyclic Sports. Annals of the Romanian Society for Cell Biology, 235–241. Retrieved from https://www.annalsofrscb.ro/index.php/journal/article/view/102
4. Agopian AJ, Evans JA, Lupo PJ. Analytic methods for evaluating patterns of multiple congenital anomalies in birth defect registries. Birth Defects Res 2018;110(1):5–11.
5. Akinmoladun, V.I., Obimakinde, O.S. and Okoje, V.N. (2013) Team Approach to Management of Oro-Facial Cleft among African Practitioners: A Survey. Nigerian Journal of Clinical Practice, 16, 86-90.
6. Al Omran Y, Abdall-Razak A, Ghassemi N, Alomran S, Yang D, Ghanem AM. Robotics in Cleft Surgery: Origins, current status and future directions. RobotSurg. 2019;6:41–6.
7. Allan E, Windson J, Stone C. Cleft lip and palate: Etiology, epidemiology, prevention and intervention strategies. AnatPhysiol. 2014;4:1-6.
8. Bamford L, McKerrow N, Barron P, Aung Y. Child mortality in South Africa: Fewer deaths, but better data are needed. South African Medical Journal 2018; 108(3):25–32.
9. Banerjee M, Dhakar A. Epidemiology-clinical profile of cleft lip and palate among children in india and its surgical consideration. CIBTech JSurg. 2013;2:45-51.
10. Basseri B, Kianmahd BD, Roostaeian J, Kohan E, Wasson KL, Basseri RJ, Bradley JP. Current national incidence, trends, and health care resource utilization of cleft lip–cleft palate. Plast Reconstr Surg 2011; 127(3):1255–1262.

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Publisher: Frontline Journals

11. Bhatia SK, Collard MM. Access to primary dental care for cleft lip and palate patients in South Wales. Br Dent J 2012; 212(E10):1–4.
12. DJuraev, A. M., & Khalimov, R. J. (2020). New methods for surgical treatment of perthes disease in children. International Journal of Psychosocial Rehabilitation, 24(2), 301-307.
13. Dzhuraev, A., Usmanov, Sh., Rakhmatullaev, H., & Khalimov, R. (2021). Our experience with surgical treatment of congenital elevation of the scapula in young children. Medicine and Innovations, 1(4), 37-44.
14. . Khodjieva D.T., Pulatov S.S., Khaidarova D.K. All about hemorrhagic stroke in elderly and senile persons (own observations) // Science of Young People (Eruditio Juvenium). 2015. №3. C. 87-96.
15. . Shomurodov. K.E. Features of cytokine balance in gingival fluid at odontogenicphlegmon of maxillofacial area. // Doctor-aspirant 2010.-42 Vol.-No.5.1.-P.187-192;
16. Ilkhomovna, K. M., Eriyigitovich, I. S., & Kadyrovich, K. N. (2020). Morphological Features Of Microvascular Tissue Of The Brain At Hemorrhagic Stroke. The American Journal of Medical Sciences and Pharmaceutical Research, 2(10), 53-59. https://doi.org/10.37547/TAJMSPR/Volume02Issue10-08
17. Khodjieva D. T., Khaydarova D. K., Khaydarov N. K. Complex evaluation of clinical and instrumental data for justification of optive treatment activites in patients with resistant forms of epilepsy. American Journal of Research. USA. № 11-12, 2018. C.186-193.
18. Khodjieva D. T., Khaydarova D. K. Clinical and neuroph clinical and neurophysiological ch ogical characteristics of teristics of post-insular cognitive disorders and issues of therapy optimization. Central Asian Journal of Pediatrics. Dec.2019. P 82-86
19. Sadriddin Sayfullaevich Pulatov. (2022). Efficacy of ipidacrine in the recovery period of ischaemic stroke. World Bulletin of Public Health, 7, 28-32.
20. 15.Tukhtarov B.E., Comparative assessment of the biological value of average daily diets in professional athletes of Uzbekistan. Gig. Sanit., 2010, 2, 65–67.

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Publisher: Frontline Journals

21. Kianifar H, Hasanzadeh N, Jahanbin A, Ezzati A, Kianifar H. Cleft lip and palate: A 30-year Epidemiologic Study in North-East of Iran. Iran J Otorhinolaryngol. 2015;27:35.

22. Kisito Nagalo, Isso Ouédraogo, Jean-Martin Laberge, Louise Caouette-Laberge, Jean Turgeon. Clinical Aspects and Management of Cleft Lip and/or Palate in Burkina Faso: A Humanitarian Pediatric Surgery-Based Study. //Open Journal of Pediatrics. Vol.05 No.02(2015), Article ID:56342,7 pages.

23. Lee CW, et al. Prevalence of orofacial clefts in Korean live births. Obstet Gynecol Sci 2015;58(3):196–202.

24. Leslie EJ, Marazita ML. Genetics of cleft lip and cleft palate. In: American Journal of Medical Genetics Part C: Seminars in Medical Genetics: 2013: Wiley Online Library; 2013: 246–258.

25. Mariano NCR, et al. Impact of orofacial dysfunction on the quality of life of adult patients with cleft lip and palate. Cleft Palate-Craniofac J 2018;55(8):1138–44.

26. Martiniuk AL, Manouchehrian M, Negin JA, Zwi AB. Brain Gains: a literature review of medical missions to low and middle-income countries. BMC Health Serv Res 2012; 12(134):134.

27. Mbuyi-Musanzayi S, Kayembe TJ, Kashal MK, Lukusa PT, Kalenga PM, Tshilombo FK, Devriendt K, Reychler H. Non-syndromic cleft lip and/or cleft palate: Epidemiology and risk factors in Lubumbashi (DR Congo), a case-control study. Journal of Cranio-Maxillofacial Surgery 2018; 46(7):1051–1058.

28. Medwick L, Synder J, Schook C, Blood E, Brown S, White W. Casual attributes of cleft lip and palate across cultures. Cleft Palate Craniofac J. 2013;50:655-67.

29. Mirfazeli A, Kaviany N, Hosseinpour KR, Golalipour MJ. Incidence of cleft lip and palate in Gorgan – Northern Iran: An epidemiological study. Oman Med J. 2012;27:461–4.

30. Odhiambo A, Rotich EC, Chindia ML, Macigo FG, Ndavi M, Were F. Craniofacial anomalies amongst births at two hospitals in Nairobi Kenya. Int J Oral Maxillofac Surg 2012; 41(5):596–603.

31. Ouédraogo, K.S. (2013) Congenital Malformations of the Face and Neck in Hospital Practice in Ouagadougou: Epidemiological, Anatomical, Clinical, and

FRONTLINE MEDICAL SCIENCES AND PHARMACEUTICAL JOURNAL
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Publisher: Frontline Journals

Therapeutic Aspects. Report of 170 Cases. M.D. Thesis, University of Ouagadougou, Ouagadougou.

32. Rezq Alswairki HJ, et al. Incidence of Egyptian live births of cleft lip and/or palate in Cairo, Luxor, Aswan and New Valley governorates: a survey study in 237,783 children. Pesqui Bras Odontopediatria Clin Integr 2019;19(1).

33. Salari, N., Darvishi, N., Heydari, M., Bokaee, S., Darvishi, F., & Mohammadi, M. (2021). Global prevalence of cleft palate, cleft lip and cleft palate and lip: A comprehensive systematic review and meta-analysis. Journal of Stomatology, Oral and Maxillofacial Surgery. doi:10.1016/j.jormas.2021.05.008.

34. Susami T, Mori Y, Ohkubo K, Takahashi M, Hirano Y, Saijo H, et al. Changes in maxillofacial morphology and velopharyngeal function with two-stage maxillary distraction-mandibular setback surgery in patients with cleft lip and palate. Int J Oral Maxillofac Surg. 2018;47:357–65.

35. Tarun Vyas, Prabhakar Gupta, Sachin Kumar, Rajat Gupta, Tanu Gupta, Harkanwal Preet Singh. Cleft of lip and palate: A review.//J Family Med Prim Care. 2020 Jun; 9(6): 2621–2625.

36. TollefsonTT, etal. Cleft lip-cleft palate in Zimbabwe: estimating the distribution of the surgical burden of disease using geographic information systems. Laryngoscope 2015;125(Suppl 1):S1–14.

37. TuL, etal. Birth defects data from surveillance hospitals in Hubei province, China, 200l–2008. Iran J Public Health 2012;41(3):20–5.

38. Wang M, et al. Prevalence of oral clefts among live births in Gansu Province, China. Int J Environ Res Public Health 2018;15(2).

39. Yasin A. Approach to patients with cleft lip and palate in orthodontics. J Cleft Lip Palate Craniofac Anomal. 2020;7:8–16.

40. Zhou Y, et al. Epidemiology of birth defects based on a birth defect surveillance system in Southern Jiangsu, China, 2014-2018. J Matern Fetal Neonatal Med 2020:1–7.

41. Ziyad Al Hammad et al. The prevalence of non-syndromic orofacial clefts and associated congenital heart diseases of a tertiary hospital in Riyadh, Saudi Arabia//

FRONTLINE MEDICAL SCIENCES AND PHARMACEUTICAL JOURNAL
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The Saudi Dental Journal. Volume 33, Issue
3, March 2021, Pages 137-142.