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Research Article

RISK FACTORS FOR THE OCCURRENCE OF DENTOFACIAL ANOMALIES AND DEFORMITIES IN CHILDREN

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ABSTRACT

801 patients diagnosed with anomalies and deformations of the dental system in children under 18 years of age, their mother's illnesses during pregnancy, their age, the degree of kinship between their parents, the effect of drugs taken by the mother during this period of pathology were studied and analyzed.

KEYWORDS

Dental diseases, anomaly, deformation, orthodontic disease, maxillofacial pathology.

INTRODUCTION

To date, obtaining effective results in the early diagnosis and treatment of dentofacial anomalies and deformities of the maxillofacial region is one of the pressing issues in the field of orthodontics.

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Large-scale scientific research is being conducted worldwide to determine the prospects and early prediction of dentofacial anomalies and deformities in children during orthodontic treatment, as well as to improve the effectiveness of diagnosis, treatment, and preventive measures.

Currently, all craniofacial complications arising from anomalies and deformities in dentistry remain a pressing issue. At the same time, comorbidities in children with dentofacial anomalies and deformities exacerbate dental problems, and measures to prevent complications of these pathologies remain unresolved. The results of all presented studies on the influence of heredity, lifestyle, and the environment on the development of anomalies and deformities in children have not been studied.

METHODS

Clinical material included data from 801 children under 18 years of age diagnosed with dentofacial anomalies and deformities.

Of the 801 patients examined, 361 (45.1±1.8%) were boys and 440 (54.9±1.8%) were girls. Patient children were representative in terms of gender indicators of the studies and contributed to ensuring the randomization of the study. The distribution of these patients by age is presented in Table 1.

Table 1

Indicators of the age distribution of children with dentofacial anomalies and deformities included in the study

Age groups	Absolute number	Relative (%) number
Up to 7 years old	17	2,1±0,5
7-10 year	137	17,1±1,3
11-14 year	383	47,8±1,8
15-17 year	264	33,0±1,7
total	801	100,0

The distribution by age was based on a list of patients who sought medical and dental care at the time of their admission. It is evident that dental care was provided at different ages for children.

The average age of all examined children was 13.2±0.1 years. Also, the majority of them (99.6±0.2%, n=798) were children of Uzbek nationality. The average weight and height of the sick children were also measured.

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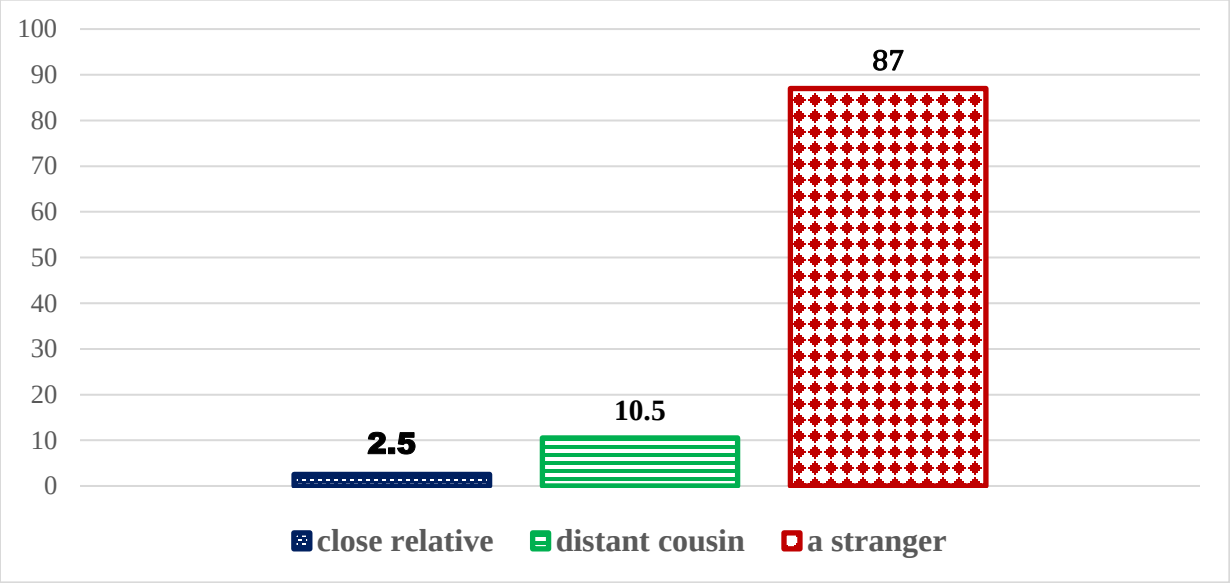
The average weight was 42.8±0.5 kg, while the average height was 153.7±0.5 cm. This situation showed that all patients had normal physical development, and when referring to individual results, it was established that all indicators of physical development parameters were within the normal range, and no lag in physical development was observed.

Along with describing sick children, it was deemed advisable to provide information about their parents. It was found that all children (n=801) came from full-fledged families, meaning that their parents lived together during the dental examination of the sick child. The degree of kinship of married parents is shown in Figure 1.



As shown in Figure 1, 20 (2.5±0.6%) of their parents were close relatives, 84 (10.5±1.1%) were distant relatives, and 697 (87.0±1.2%) were genetically unrelated to each other.

It is known that the age of parents is important during childbirth, and the older they are, the lower the likelihood of having a healthy child. Taking this into account, the average age of the parents at the time of the child's birth was calculated. It was established that during this period, the average age of mothers was 25.4±0.1 years, while the average age of fathers was 27.4±0.2 years. We want to acknowledge that this age is not optimal for having children.

Thus, the sex composition of children diagnosed with dentofacial anomalies and deformities was close to each other, with boys accounting for 45.1% and girls for 51.9%, with a ratio of boys to girls of 1:1.15. Also, the majority of them were 11-14 years old (47.8%) and 14-17 years old (33.0%), while the smallest number were

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children under 7 years old (2.1%) and 7-10 years old (17.1%).

When examining the degree of kinship between the parents of sick children, it was found that 2.5% of them were close relatives, 10.5% were distant relatives, and the majority (87%) were genetically alien to each other. Attention was also paid to the fact that all parents were of childbearing age - the average age of fathers was 27.4 years, and the average age of mothers was 25.4 years. The presented data allowed for a certain understanding of the clinical material.

There are many external and internal factors that influence the birth and development of a healthy child, which negatively affect the child's health and lead to many negative consequences, including dentofacial anomalies and deformities. Among the main factors negatively affecting the child's physical and mental development are various circumstances related to the mother's pregnancy with this child. Therefore, at the next stage of the study, it was deemed necessary to characterize the degree of occurrence of factors during pregnancy for this child.

Of the mothers of the studied sick children, 196 (24.5±1.5%) had pregnancy without toxicosis, however, most of them had toxicosis - in the first period of pregnancy, toxicosis was detected in 530 (66.2±1.7%) mothers, and in the second period of pregnancy in 75 (9.4±1.0%) mothers. It is evident that in two-thirds of the mothers examined, toxicosis was observed in this child at different stages of pregnancy, which is one of the factors that negatively affects the course of pregnancy and the fetus itself.

Knowing that the presence of somatic and infectious diseases experienced during pregnancy can also have a negative impact on the fetus, the frequency of diseases experienced during pregnancy was studied from the mother herself and from her medical chart. The results obtained are presented in Table 2. It was established that in the majority of mothers examined (82.3±1.3%, n=659), no symptoms of the disease were observed, and no nosological units were diagnosed.

Table 2

The frequency of maternal illnesses experienced by this child during pregnancy

Diseases	Absolute number	relative (%) number
Not diseases	684	85,4±1,2

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Different anomalies	78	9,7±1,0
Endemic diesis	31	3,9±0,7
breeze	19	2,1±0,5
Allergic diesis	21	2,6±0,6
rheumatism	3	0,4±0,2
Other diesis	13	1,62±0,4
Pregnancy diesis	Middle 1,41	

It is evident that the majority of pregnant women (85.4±1.2, n=684) did not become ill during this pregnancy, while 117 (14.6±1.2%) experienced various diseases. The total number of nosological units was 165, which is 1.41 units per patient. It was found that anemia of varying severity (99.7±1.0%, n=78), endemic goiter (3.9±0.7%, n=31), influenza, acute respiratory viral infections (2.1±0.5%, n=19), allergic diseases (2.6±0.6%, n=21) were the leading causes, and rheumatism (0.4±0.2%, n=3) was diagnosed in a small number of cases. Other diseases were found in 0.1-0.2%, including varicose veins, hepatitis B, polyarthritis, gastritis, lumbar hernias, sinusitis, chronic kidney disease, hypertension, cholestasis, and bronchial asthma. The low incidence of infectious diseases among pregnant women (14.6%) and the very low incidence of infectious diseases (2.5%) are noteworthy.

Another thing that attracts attention is that they use various medications during pregnancy. The study of this condition is aimed at determining the level of drug use during pregnancy. The data obtained in this regard is presented in Figure 2.

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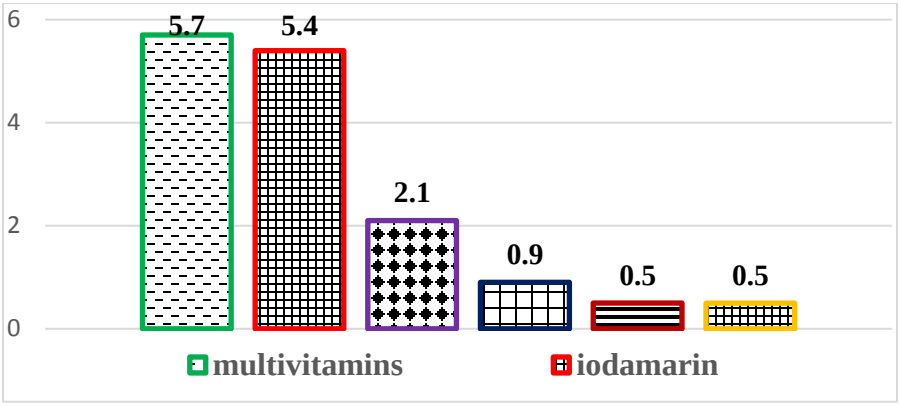

Figure 2. Indicators of mothers taking various medications during pregnancy for a sick child, %

It turned out that these mothers received 6 different drugs during pregnancy - polyvitamines in 46 cases (5.7±0.8%), iodomarin in 43 (5.4±0.8%), iron preparations in 10 (1.2±0.4%), magnesium B6 in 7 (0.9±0.3%), paracetamol in 4 (0.5±0.2%) and calcium preparations in 4 (0.5±0.2%) cases. The total number of women who received the drug was 114 (17.2±1.2%) and 687 (85.8±1.2%) who did not receive the drug, respectively.

At the same time, the level of consumption of antimicrobial drugs by pregnant women, which have proven negative effects on the body, as well as on the fetus (teratogenic, embryotoxic effects), was also studied. Of the mothers of sick children who participated in the study, 23 (2.9±0.6%) used these drugs during pregnancy, while 778 (9.7±0.6%) did not use these drugs in any case.

Thus, in mothers of children with dentofacial anomalies and deformities, toxicosis was observed in 66.2% of cases during the first trimester of pregnancy, while in 9.4% of cases during the second trimester, indicating that toxicosis was detected in 2/3 of pregnant women. Women who had experienced a disease at the beginning of pregnancy accounted for 14.6%, the identified nosological units included anemia of varying severity (9.7%), endemic goiter (3.9%), allergic diseases (2.6%), influenza, acute respiratory viral infections (2.1%), while the remaining diseases were found in 0.1-0.2%. A total of 14.2% of women who used various drugs during pregnancy and 2.6% who used antimicrobial drugs. It is noteworthy that all of them used antimicrobial drugs themselves, without a doctor's prescription.

In addition to the diseases encountered by mothers during pregnancy and the drugs they used, data on their pregnancies for this child was also analyzed.

The results obtained showed that the birth of these children occurred on time in 762 (95.1±0.8%) cases,

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premature in 32 (4.0±0.7%) cases, and post-term in 7 (0.9±0.3%), while 769 (96.0±0.4%) children were born healthy, and 32 (4.01±0.7%) had pathological births. The number of children born to this sick child was also taken into account (Table 3).

Table 3

What are the childhood rates of sick children in the family included in the study

Number of children	Absolute number	Relative (%) number
1	364	45,4±1,8
2	279	34,8±1,4
3	131	16,4±1,3
4	24	3,0±9,6
5	3	0,4±0,2

It is evident that the children were primarily the first and second children (80.2%).

As for breastfeeding, most of them were breastfed at birth (89.8±1.1%, n=719), only 82 children (10.2±1.1%) were artificial from birth, breastfeeding lasted an average of 12.5±0.3 months, and only 2.7±0.6% (n=22%) of children were below normal weight.

CONCLUSION

Thus, among the obtained indicators, no specific factors were identified that could negatively impact the development of dentofacial anomalies and deformities in children, no patterns were observed, but at the same time, these indicators made it possible to fully characterize the clinical material obtained during the study.

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