GEORGIAN MEDICAL NEWS

No 3 (264) 2017

მიღებული შედეგებზე დაყრდნობით, ავტორებს გამოტანილი იქვი დასკვნა, რომ ზედა ტუჩისა და სასის თანდაყოლილი ნაპრალის განვითარებაზე მნიშვნელოვან ზეგავლენას ახდენს სტრესული სიტუაციების არსებობა ორსულის ოჯახში, სტანდარტიზებული (adjusted) OR=7.76, 95% CI: 1.93–31.33. ამ პათოლოგიის

განვითარებაში, ასევე, გარკვეულ როლს ასრულებენ ორსულობის პირველ ტრიმესტრში გადატანილი ინფექციური დაავადებები,არაგადამდები დაავადებები და სამკურნალო პრეპარატების მოხმარება, შესაბამისად, სტანდარტიზებული OR=2.10, 95% CI: 0.77–5.70; OR=2.88, 95% CI:0.83–9.97; OR=2.22, 95% CI: 0.77–10.41.

DEPENDENCE OF MORPHOMETRIC PARAMETERS OF THE DENTAL OCCLUSION ON THE TYPE OF THE LOWER JAW GROWTH IN CHILDREN WITH CLASS II₁ DENTOFACIAL ANOMALIES WHO LINE IN THE NORTHERN UKRAINE

[1]Galich L.V., [2]Kuroedova V., [1]Lakhtin Yu., [2]Galich L.B., [1]Moskalenko P.

[1]Medical Institute at Sumy State University; [2]Higher State Educational Institution "Ukrainian Medical Dental Academy", Ukraine

Recently, specialists from many countries of the world have observed an increase in the prevalence of dentofacial anomalies in children and adolescents, which, in particular, is associated with urbanization processes and environmental degradation [4]. According to WHO, the incidence of dentofacial anomalies in the world is 92% [1]. One of the most common anomalies of the dentofacial apparatus in the late interchangeable occlusion is the violation of occlusion in the sagittal direction, namely, class II₁ according to Angle's classification [7]. For the timely treatment of this pathology in the pubertal period, the early detection is necessary [9]. However, the results of epidemiological studies in different regions and countries are contradictory [1,2,6-8,11], there is insufficient information on the structure of class II₁ anomalies according to Angle's classification with different types of lower jaw growth among 10-13 years old children. This necessitates a further study of the prevalence of dentofacial anomalies.

Purpose of the study - to study the structure of dentofacial anomalies in children and adolescents in Sumy city and Sumy oblast (Ukraine) by their applying. To identify the dentoalveolar morphological peculiarities of the occlusion in 10-13 years old patients with anomalies of class II₁ according to Angle's classification with different types of lower jaw growth.

Material and methods. A retrospective analysis of 2236 outpatient dental cards of urban and rural patients with orthodontic pathology, which applied to the regional children's clinical dental clinic (Ukraine), was conducted. Patients were divided into three age groups: 6-9 years old (early mixed occlusion) - 592 children; 10-13 years old (late mixed occlusion) - 1180 children; over 13 years old (permanent occlusion) - 464 persons (Fig. 1).

The form of dentofacial anomalies was established according to the Angle's classification. Open and cross occlusions were divided in separate groups.

In addition, 76 patients with class II₁ anomalies according to Angle's classification aged 10-13 years were examined in the clinic to determine the type of lower jaw growth. Children underwent an X-ray study, diagnostic models were made. In practical orthodontics, the most widely X-ray method of research is used [10], especially orthopantomography, which allows to carry out a detailed diagnosis, to select the strategy and tactics of orthodontic

intervention, to control the stages and the final result of the treatment, depending on the direction of growth of the dentofacial apparatus, it allows the doctor to give a long-term prognosis [3,12].
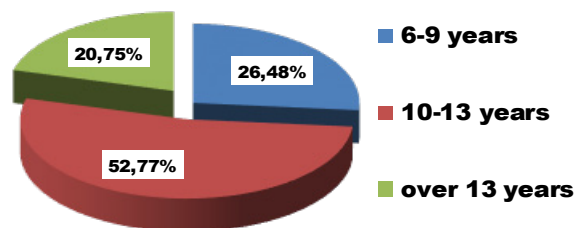
FIg. 1. The classification of patients by age

Orthopantomographic examination was performed to determine the type of lower jaw growth according to the procedure described by R. Reinhardt and others [13] (Fig. 2). All patients were divided into five groups, taking into account the type of lower jaw growth: group I - 21 patients with a neutral type of growth ($\llcorner$ Go = 123±5°), group II - 11 children with vertical growth ($\llcorner$ Go> 128°), group III - 9 patients with horizontal type of growth ($\llcorner$ Go <118°), group IV - 9 children with combined (neutral with vertical) type of growth, group V consists of 5 children with a combination of neutral and horizontal type of lower jaw growth. Total 152 measurements were made.

On the diagnostic models of the jaws, to determine the degree of the severity of morphological changes, the biometric indicators were calculated, since they are an important criterion for choosing a treatment tactics [5]. Morphometric examinations were carried out on 55 control-diagnostic models of the jaws of patients with a late mixed occlusion with dentofacial anomalies of class II according to Angle's classification by the method of Linder-Hart, Korkhaus. Total 220 measurements were made.

The statistical processing of the material was carried out according to parametric criteria (mean value - M, standard error - m), statistical significance of the difference between the indices of two independent groups was carried out according to the parametric criterion (Student) using the statistical program package AtteStat 10.8.4. for MS Excel. Statistically significant differences were considered when $p < 0.05$.

Fig. 2. Determination of the type of lower jaw growth

Results and their discussion. In the structure of dentofacial anomalies in patients of Sumy city and Sumy oblast, applying for orthodontic care, it is characteristic for all age groups that in a significant majority there are anomalies of individual teeth and dental curves (class I according to Angle's classification) and that is ranged from 67.95% to 77.87% of cases (Fig. 3).
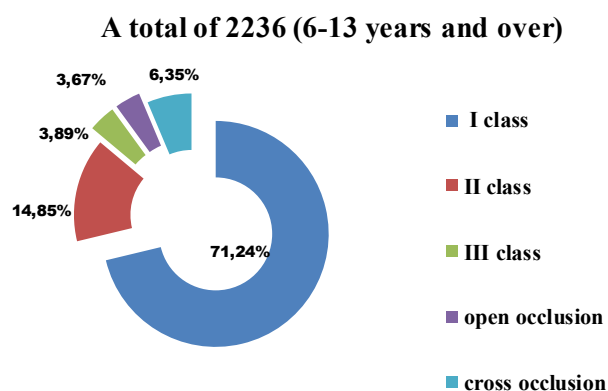
A total of 2236 (6-13 years and over)

- ■ I class — 71,24%
- ■ II class — 14,85%
- ■ III class — 3,89%
- ■ open occlusion — 3,67%
- ■ cross occlusion — 6,35%

Fig. 3. The structure of dentofacial anomalies in 6 - 13 years old children

With regard to occlusion anomalies, in the age group of 6-9 years old patients (early mixed occlusion), the most common is an open occlusion (7.44%), which can be explained by the presence of a large number of various harmful habits at this age.

At a later age (late period of mixed and permanent occlusion), there is a decrease in the number of patients with open occlusion and class III anomalies according to Angle's classification, which is most likely due to the elimination of bad habits at an earlier age and the eruption of permanent teeth.

The occlusion anomalies of class II according to Angle's classification progress with age, and their percentage increases almost 9 times (from 2.87% up to 19.18%) both in 10-13 years old children and in patients older than 13 years in comparison with the early mixed occlusion.

On orthopantomograms it was found that in a significant number of examined patients the value of the jaw angles was 123±5°, which corresponds to the neutral type of lower jaw growth (Table).

The neutral and combined types of growth were leading in boys, in girls more often the neutral (∟ Go = 123 ± 5°), vertical (∟ Go> 128°) and horizontal (∟ Go <118°) types of lower jaw growth were observed.

Among the patients with the combined growth types a combination of neutral and vertical types of lower jaw growth was revealed in 63.16%, and a combination of neutral and horizontal types of growth was revealed in 36.84% of cases.

In the biometric study of the control and diagnostic models of the jaws, a symptom complex of morphometric indices of dental curves with dentofacial anomalies of class II according to Angle's classification, depending on the type of lower jaw growth, was established.

For patients with a neutral type of lower jaw growth, the width of the upper dental curve between the canines averages 31.72±0.25 mm at a norm of 32.47±0.25 (p=0.05) and a lower one averages 25.86±0,43 mm at a norm of 24.40±0.40 mm (p<0.01); in the region of the first premolars on the upper jaw it averages 33.89±0.54 (p=0.001), on the lower jaw - 34.17±0.61 (p<0.001) at a norm of 37.05±0.58 mm and 37.05±0.58 mm respectively. It was found that the width in the region of the first permanent molars of the upper jaw is 45.05±0.78 mm at a norm of 48.35±0.78 mm (p=0.01), of the lower one it is 46.24±0.56 mm at a norm of 48.35±0.78 (p=0.05); the length of the frontal segment of the upper dental curve is 20.53±0.33 mm (p=0.001), of the lower dental curve - 15.1±0.4 mm (p=0.01) at a norm of 18.26 ± 0.26 mm and 16.29±0.25 mm respectively.

For patients with a vertical type of lower jaw growth, the following results were obtained: the width of the upper dental curve in the region of 3/3 teeth is 33.86±0.67 mm (N=32.44±0.47 mm) (p=0.05), upper dental curve - 26.25±0.49 mm (N=24.44±0.47 mm) (p<0.01); the width between 4/4 teeth on the upper jaw is 33.9±0.54 mm (N=36.36±0.60 mm) (p=0,01), on the lower jaw – 34.1±0.66 mm (N=36.36±0.60 mm) (p=0.05). Transversal dimensions in the region of 6/6 teeth on the upper jaw are 43.95±0.69 mm (N=46.69±0.84 mm) (p<0.01), on the lower jaw - 44.52±0.50 mm (N=47.25 ± 1.07 mm) (p = 0.05); the length of the frontal part of the upper jaw is 19.12 ± 0.52 mm (N = 47.25 ± 1.07 mm) (p <0.05), of the lower jaw - 13.9 ± 0.41 mm (N = 15.9 ± 0.35 mm) (p = 0.01).

Biometric study of the control and diagnostic models of the jaws of patients with horizontal growth showed that the width of the upper dental curve between the canines averaged 31.61

Table. Types of lower jaw growth in children according to orthopantomograms

Sex	Neutral growth type		Vertical growth type		Horizontal growth type		Combined growth type	
	n	%	n	%	n	%	n	%
Boys	17	22.37	5	6.58	4	5.26	12	15.79
Girls	11	14.47	10	13.16	10	13.16	7	9.21
Total	28	36.84± 5.53	15	19.74± 4.56	14	18.42±4.47	19	25± 4.98

± 0.53 mm at a morn of 32.90 ± 0.53 mm (p = 0.05) and of the lower one - 25.52±0.29 mm at a norm of 24.47 ± 0.43 mm (p <0.05); in the region of the first premolars on the upper jaw it is 33.59 ± 0.61 mm (p = 0.001), on the lower one - 32.28 ± 0.36 mm (p <0.001) at a norm of 36.99 ± 0.68 mm and 36.99 ± 0.68 mm respectively. It was established that the width in the region of the first permanent molars of the upper jaw is 43.42 ± 0.68 mm at a norm of 47.2 ± 1.41 mm (p = 0.01), of the lower jaw - 43.77 ± 0.17 mm at a norm of 47.2 ± 1.41 (p = 0.05); the length of the frontal segment of the upper dental curve is 20.97 ± 0.38 mm (p = 0.001), of the lower one it is 14.78 ± 0.39 mm (p = 0.01) at a norm of 17.73 ± 0.5 mm and 16.03 ± 0.44 mm respectively.

For children who have a combination of neutral and vertical type of lower jaw growth, it is typically the following: the width of the upper dental curve in the region of 3/3 teeth is 33.70 ± 0.14 mm (N = 32.92 ± 0.28 mm) (p = 0,05), of the lower one - 26,94 ± 0,46 mm (N = 24,76 ± 0,68mm) (p <0,01); between 4/4 teeth on the upper jaw - 34,84 ± 0,61 mm (N = 36,97 ± 0,74 mm) (p = 0,01), on the lower jaw – 34.77 ± 0.37 mm (N = 36.97 ± 0.74 mm) (p = 0.05). Transversal dimensions in the region of 6/6 teeth on the upper jaw are 45.37 ± 0.82 mm (N = 48.24 ± 0.97 mm) (p <0.01), at the lower jaw - 45.72 ± 0.51 mm (N = 48.24 ± 0.97 mm) (p = 0.05); the length of the frontal region of the upper jaw is 19.83 ± 0.62 mm (N = 18.34 ± 0.27 mm) (p <0.05), of the lower jaw -15.32 ± 0.25 mm (N = 16.23 ± 0.31 mm) (p = 0.01).

Under the combination of neutral and horizontal type of lower jaw growth, it was established the following: the width of the upper dental curve between the canines averages 32.44 ± 0.37 mm at a norm of 33.78 ± 0.59 mm (p = 0.05) and of the lower one it is 23, 1 ± 0.52 mm at a norm of 24.42 ± 0.57 mm (p <0.01); in the region of the first premolars on the upper jaw - 33.16 ± 0.69 mm (p = 0.001), at the lower jaw - 35.16 ± 0.63 mm (p <0.001) at a norm of 37.1 ± 0.57 and 37.1 ± 0.57mm respectively. It was found that the width in the region of the first permanent molars of the upper jaw is 44.28 ± 0.39 mm at a norm of 47.36 ± 0.63 mm (p = 0.01), of the lower one - 44.12 ± 0.61 mm at a norm of 47.36 ± 0.63 mm (p = 0.05); the length of the frontal segment of the upper dental curve is 20.66 ± 0.55 mm (p = 99.9), of the lower - 15.76 ± 0.37 mm (p = 0.01) at a norm of 18.22 ± 0.89 mm and 16.56 ± 0.24 mm, respectively.

Conclucion. Orthodontic care in the Sumy Oblast Children's Clinical Dental Clinic is mainly used by children from 10 to 13 years old. The anomalies of individual teeth and dental curves were leading in all age groups (71.24%).

Among the occlusion anomalies in 10-13 years old children, a significant proportion falls on the class II according to Angle's classification (19.18%).

A third of 10-13 years old patients, with class II anomalies according to Angle's classification, has a neutral type of lower jaw growth (36.84 ± 5.53%), horizontal and vertical types of growth are 18.42 ± 4.47% and 19.74 ± 4.56% respectively. The combination of neutral and vertical type of lower jaw growth occurs in 1.7 times more often than the combination of neutral and horizontal types.

In all groups, a characteristic symptom complex of morphological changes in the dental curves of the upper and lower jaws of different severity was established. The most pronounced morphological changes are observed in the group of patients with a horizontal type of lower jaw growth.

REFERENCES

1. Зубарева А.В., Аверьянов С.В., Шкуратова И.А. Зубочелюстные аномалии у разных этнических групп студентов Уфы // Ортодонтия. - 2012. - № 1: 66-67.
2. Кравченко В.Г., Дзараева З.Р., Григорьева П.А., Вакушина Е.А. Структура аномалий окклюзии у жителей Южного и Северо-кавказского федеральных округов по данным эпидемиологического контроля // Ортодонтия. - 2012. - V. 57(1): 8-10.
3. Куроедова В.Д., Дмитренко М.И., Рейнхардт Р. Функциональная характеристика зубочелюстной системы немецких и украинских ортодонтических пациентов по данным ортопантомограмм // Ортодонтия. – 2006. - № 2: 20-21.
4. Куроєдова В.Д. Комплексна оцінка хвороби «зубощелепна аномалія» та прогноз лікування ортодонтичних пацієнтів. Автореф. дис… д-р. мед. наук. Полтава: 1999; 32.
5. Попов С.А, Сатыго Е.А., Мечникова И.И. Трансверзальные изменения параметров зубных рядов у подростков с дистальной окклюзией при проведении ортодонтического лечения с удалением и без удаления отдельных зубов // Стоматология детского возраста и профилактика. – 2012. - №2: 45-49.
6. Терехова Т.В., Зинович О.В., Бычковская Т.Н., Макейчик Т.В. Распространенность и структура зубочелюстных аномалий у городских детей Гомельской области 7-15 лет // Медицинский журнал. - 2016. -№ 3: 130-134.
7. Фарес И.М., Пашаев А.Ч. Социально-эпидемиологические предпосылки распространенности зубочелюстных аномалий у детского населения г.Баку // Ортодонтия. - 2009. № 2: 10-12.
8. Dargiewicz E., Szarmach I., Kaczyńska J., Buczko P. Evaluation of occlusion and orthodontic needs of thirteen-year-old children from Podlaskie voivodeship // Progress in Health Sciences. - 2015. – V.5(2): 84-93.
9. Ehsani S., Nebbe B., Normando D., Lagravere M.O., Flores-Mir C. Dental and skeletal changes in mild to moderate class II malocclusions treated by either a twin-block or Xbow appliance followed by full fixed orthodontic treatment // Angle Orthod. -2015. – V. 85: 997–1002.
10. Kelly M.P., Vorperian H.K., Wang Y. et al. Characterizing mandibular growth using three-dimensional imaging techniques and anatomic landmarks // Archives of Oral Biology. - 2017. – V.77: 27 – 38.
11. Luchynskyi M.A. Dental health state of children living in different anthropogenic conditions. Journal of Education // Health and Sport 2015. – V. 5(11): 170-178.
12. Reinhardt R., Kurojedova V., Wehrbein H. Analysis of supporting areas and angles on dental pantomograms using a new program.- Final Programme Abstract Book 86th Congress EOS European Orthodontic Society, Portoroz, Slovenia: 15-19 june 2010; SP: 295.
13. Reinhardt R., Burwinkel M., Emmer D. Comparison of angular measurements in digital and conventional panoramic radiographs or lateral cephalograms.-Final Programme Abstract Book 81st Congress EOS European Orthodontic Society, Amsterdam - Netherlands : 3-7 june 2005; 127.

SUMMARY

DEPENDENCE OF MORPHOMETRIC PARAMETERS OF THE DENTAL OCCLUSION ON THE TYPE OF THE LOWER JAW GROWTH IN CHILDREN WITH CLASS II₁ DENTOFACIAL ANOMALIES WHO LINE IN THE NORTHERN UKRAINE

¹Galich L.V., ²Kuroedova V., ¹Lakhtin Yu., ²Galich L.B., ¹Moskalenko P.

¹Medical Institute at Sumy State University; ²Higher State Educational Institution "Ukrainian Medical Dental Academy", Ukraine

The aim of the work was to study the structure of dentofacial anomalies in children and adolescents in Sumy city and Sumy oblast, to identify dentoalveolar morphological peculiarities of the occlusion in 10-13 years old patients with class II₁ anomalies according to Angle's classification with different types of lower jaw bone growth.

A retrospective analysis of 2236 outpatient dental cards of urban and rural patients with orthodontic pathology was conducted. Patients were divided into three age groups: 6-9 years old (early mixed occlusion) - 592 children; 10-13 years old (late mixed occlusion) - 1180 children; over 13 years old (permanent occlusion) - 464 persons; besides 76 patients with class II₁ anomalies according to Angle's classification aged 10-13 years were examined. To determine the type of lower jaw growth, the children underwent orthopantomographic examination, diagnostic models were made and biometric indicators were calculated to determine the severity of the morphological changes.

It was established that anomalies of individual teeth and dental curve dominated in all age groups (71.24%). Among the occlusion anomalies, a large part falls to class II anomalies according to Angle's classification (19.18%). A third of these patients have a neutral type of lower jaw growth (36.84±5.53%), horizontal and vertical types of growth reach 18.42±4.47% and 19.74±4.56%, respectively. The combination of neutral and vertical type of growth of the lower jaw occurs in 1.7 times more than the combination of neutral and horizontal. The most pronounced morphological changes were observed in the group of patients with a horizontal type of lower jaw growth.

When planning treatment and prophylactic measures among patients of the orthodontic profile, it is necessary to take into account the peculiarities of both the prevalence of pathology in the region and the morphological changes of different severity in the dental curves of the jaws.

Keywords: dentofacial anomalies, prevalence of dentofacialr anomalies, class II according to Angle's classification, growth of jaws, types of jaw growth, orthopantomography, morphometry.

РЕЗЮМЕ

ЗАВИСИМОСТЬ МОРФОМЕТРИЧЕСКИХ ПАРАМЕТРОВ ПРИКУСА ОТ ТИПА РОСТА НИЖНЕЙ ЧЕЛЮСТИ У ПАЦИЕНТОВ СЕВЕРНОГО РЕГИОНА УКРАИНЫ С ЗУБОЧЕЛЮСТНЫМИ АНОМАЛИЯМИ II₁ КЛАССА ПО ЭНГЛЮ

¹Галич Л.В., ²Куроедова В.Д., ¹Лахтин Ю.В., ²Галич Л.Б., ¹Москаленко П.А.

¹Медицинский институт Сумского государственного университета;
²Высшее государственное учебное заведение "Украинская медицинская стоматологическая академия", Украина

Целью исследования явилось изучение структуры зубочелюстных аномалий у детей и подростков города Сумы и Сумской области и выявление зубоальвеолярных морфологических особенностей прикуса у пациентов 10-13 лет с аномалиями II₁ класса по Энглю с разным типом роста нижней челюсти.

Проведен ретроспективный анализ 2236 амбулаторных стоматологических карточек городских и сельских пациентов с ортодонтической патологией. Пациенты были разделены на три возрастные группы: дети в возрасте от 6-9 лет (ранний смешанный прикус) - 592; 10-13 лет (поздний смешанный прикус) - 1180 детей; выше 13 лет (постоянный прикус) - 464; кроме того, обследовано 76 пациентов с аномалиями II₁ класса по Энглю в возрасте 10-13 лет. Для определения типа роста нижней челюсти детям проведено ортопантомографическое исследование, изготовлены диагностические модели и по ним рассчитаны биометрические показатели для выявления степени тяжести морфологических изменений.

Установлено, что во всех возрастных группах доминировали аномалии отдельных зубов и зубных рядов (71,24%). Среди аномалий прикуса значительная часть приходится на II класс по Энглю (19,18%). У трети этих пациентов наблюдается нейтральный тип роста нижней челюсти (36,84±5,53%), горизонтальный и вертикальный типы роста составили 18,42±4,47% и 19,74±4,56%, соответственно. Сочетание нейтрального и вертикального типов роста нижней челюсти встречается в 1,7 раза больше, чем сочетание нейтрального с горизонтальным. Наиболее выраженные морфологические изменения наблюдались в группе пациентов с горизонтальным типом роста нижней челюсти.

При планировании лечебно-профилактических мероприятий среди пациентов ортодонтического профиля необходимо учитывать особенности как распространенности патологии в регионе, так и морфологические изменения зубных рядов челюстей разной степени тяжести.

რეზიუმე

თანკბილვის მორფოლოგიური პარამეტრების დამოკიდებულება ქვედა ყბის ზრდის ტიპზე უკრაინის ჩრდილოეთ რეგიონის კბილ-ყბის ენგლიუს მიხედვით II₁ კლასის ანომალიებით მოზარდებში

¹ლ.ვ. გალიხი,²ვ. კუროედოვა,¹ჲუ. ლახტინი,²ლ.ბ. გალიხი, ¹ჰ. მოსკალენკო

¹სუმის სახელმწიფო უნივერსიტეტი,სამედიცინო ინსტიტუტი; ²უმაღლესი სახელმწიფო სასწავლო დაწესებულება "უკრაინული სამედიცინო სტომატოლოგიური აკადემია", უკრაინა

ნაშრომის მიზანს წარმოადგენდა კბილ-ყბის ანომალიების სტრუქტურის შესწავლა ქალაქ სუმისა და სუმის ოლქში ბავშვებსა და მოზარდებში, 10-13 წლის პაციენტების თანკბილვის კბილალვეოლური მორფოლოგიური თავისებურებების გამოვლენა, ენგლიუს მიხედვით II₁ კლასის ანომალიების ქვედა ყბის ზრდის სხვადასხვა სახით.

ჩატარდა ორთოდონტური პათოლოგით ქალაქში და სოფელში მცხოვრებ 2236 პაციენტის ამბულატორიული სტომატოლოგიური ბარათების რეტროსპექტიული ანალიზი, ასევე 10-13 წლის ასაკის 76 პაციენტის გამოკვლევა ენგლიუს მიხედვით II₁ კლასის ანომალიით. ქვედა ყბის ზრდის ტიპის განსაზღვრის მიზნით ბავშვებს ჩაუტარდათ ორთოპანტომოგრაფიული კვლევა, დამზადებული იყო დიაგნოსტიკური მოდელი და მორფოლოგიური ცვლილებების სიმძიმის დონის გამოვლენის მიზნით მის მიხედვით გამოთვლილი იქნა ბიომეტრიული მაჩვენებლები.

დადგენილია,რომ ყველა ასაკობრივ ჯგუფებში დომინირებს ცალკეული კბილებისა და კბილების რიგების (71,24%) ანომალიები. თანკბილვის ანომალიებს შორის მნიშვნელოვანი ნაწილს შეადგენს ენგლიუს მიხედვით II კლასი (19,18%). ამ პაციენტების მესამედს შეინიშნება ქვედა ყბის ზრდის ნეიტრალური ტიპი (36,84±5,53%), ზრდის ჰორიზონტალური და ვერტიკალური ტიპები შეადგენს 18,42±4,47% და 19,74±4,56%, შესაბამისად. ქვედა ყბის ნეიტრალური და ვერტიკალური ზრდის ტიპების თანხვედრა გამოვლინდა 1,7-ჯერ უფრო ხშირად,ვიდ-რე ნეიტრალურის და ჰორიზონტალურის. ყველაზე გამოხატული მორფოლოგიური ცვალებები დაფიქსირდა პაციენტთა ჯგუფში ქვედა ყბის ზრდის ჰორიზონტალური ტიპით.

ავტორებს გამოტანილი აქვთ დასკვნა,რომ ორთოდონტური პროფილის პაციენტებისთვის სამკურნალო პროფილაქტიკური ღონისძიებების დაგეგ-ვისას აუცილებელია გათვალისწინებული იყოს როგორც რეგიონში პათოლოგიის გავრცელება,ასევე სხვადასხვა სიმძიმის დონის ყბათა კბილების რიგების ცვლილებები.

MICROBIOLOGICAL ASPECTS OF THE ORTHODONTIC TREATMENT

Zharmagambetova A., Tuleutayeva S., Akhmetova S., Zharmagambetov A.

Karaganda State Medical University, Department of Childhood Dentisrty and Surgical Dentistry, Faculty of General Medicine and Dentistry, Kazakhstan

Today, the prevalence of dental diseases remains high [6,9,13]. Dentoalveolar anomalies are one of the first places for the prevalence after dental caries and periodontal disease [1,4,14,18]. The high prevalence of dentoalveolar anomalies requires detailed diagnostics and rational treatment and prevention. To treat dentoalveolar anomalies, both removable and non-removable treatment methods are used. Orthodontic devices applied eliminate dentoalveolar anomalies, normalize the dental system function, provide the aesthetic needs of the patient, increase the life quality in general. However, the orthodontic appliance in the mouth worsens conditions for its self-cleaning, complicates the teeth care and makes an environment favorable to the soft tooth deposit. In this regard, there is a high microbial contamination of teeth surfaces and orthodontic appliances covering their extensive soft deposit that, in turn, leads to a demineralization of tooth enamel. In addition, there is change in the mouth microflora composition, which presents an increase in the number of pathogenic and opportunistic microorganisms, disbacteriosis mouth events. These factors contribute to the high prevalence of dental caries and inflammatory periodontal diseases. Therefore, being a panacea to treat dentoalveolar anomalies, the orthodontic appliance at the same time, have an adverse impact on the oral cavity state, but also on the organism as a whole, which requires further and careful study. On this basis, at the orthodontic treatment, various fundamental researches are held such as cytological, microbiological and others [2,8,10,15].

In modern dentistry, preventing dental caries is very important, which is aimed at reducing the number of bacteria and increasing the tooth resistance to various influences, as the major causative agent of dental caries is the opportunistic pathogenic oral microflora and its metabolic products. The research results show that the orthodontic treatment changes the qualitative and quantitative oral microflora composition: increases the number and frequency of the isolation rate of particular species, finds mouth atypical microbial strains, the symbiotic microflora ceases to perform barrier role for non-residents, pathogenic staphylococci and yeast-like fungi actively vegetate. According to Patack N.E. et al, and Pramod S. et al. [16,17] the microbial contamination creates conditions for developing inflammation in paradontium edge. It is also known that when wearing orthodontic appliances in the oral cavity, there is an increased amount of Streptococcusmutans, Candidaalbicans, Lactobacillusspp., Enterobacteriaceaespp., which are a key link in developing teeth demineralization and periodontal diseases.

Clinical and microbiological studies by several authors have shown that using orthodontic appliances leads to a statistically significant increase in the percentage of bacteria containing the