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Dear reader!

This is the new issue of the international scientific and practical journal «INTER MEDICAL JOURNAL» that continues to be published by the co-founders, among which are Uzhgorod National University, NGO "Academia Košice", LLC "University Dental Clinic" and NGO "Association of Forensic Dentistry ".

Today we are witnessing the rapid development of theoretical and practical medicine by improving the known methods of diagnostics, prevention, treatment and developing the new ones, based on the achievement of pharmacology, computer technology and modern discoveries in medicine. These advances have found their places at the essentialy innovative diagnostic and therapeutic approaches that require highly qualified specialists in each area. So, our journal is established to optimize the orientation of practical clinicians among fundametally new developments.

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Our journal publishes original researches that aimed to improve the health and quality of life; analytical articles, lectures and reviews in the fields of fundamental developments, among whicha are dentistry, general surgery, neurology, pediatrics; the results of preclinical and clinical experiments in diagnostics and treatment.

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Publisher and Editorial Board ensure to provide maximum effort for lead up our joural at the respectfull and deserved place in Ukraine medical scientific communnity and worldwide scientific space.

We invite authors for further cooperation and looking forward for interesting and relevant articles.

Editor-in-Chief of
«INTER MEDICAL JOURNAL»
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ECTODERMAL DYSPLASIA IN PEDIATRIC DENTISTRY: A CASE REPORT

N.O. Savichuk, O.V. Klitynska, I.A. Mochalov

Department of Dentistry of Childhood Age, National Medical Academy of Post-Diploma Education of P.L. Shupik, Kyiv, Ukraine
Department of Dentistry of Childhood Age, State Higher Educational Establishment "Uzhgorod National University", Uzhgorod, Ukraine

Summary: Providing of dental care to patients with appeared and hidden congenital malformations both single organs and body systems is presented as difficult question of practical public health. Ectodermal dysplasia - is a group of diseases characterized by the presence of abnormalities in the development of ectoderm-derived tissues (skin, hair, nails, teeth, fat and sweat glands). Clinical case of 6-years boy with congenital hypohydrotic dysplasia in pediatric dentistry practice was presented.

Keywords: ectodermal dysplasia, pediatric dentistry

Introduction. Providing of dental care to patients with appeared and hidden congenital malformations both single organs and body systems is presented as difficult question of practical public health. According to complexity and multiplicity of negative clinical situation for these type of patients they need a highly qualified dental care and co-working with related medical professionals for full treatment and rehabilitation [1].

Ectodermal dysplasia is a group of diseases characterized by the presence of abnormalities in the development of ectoderm-derived tissues (skin, hair, nails, teeth, fat and sweat glands). Usually specialists use the digital classification of ectodermal dysplasia: 1 - hair dysplasia 2 - teeth dysplasia, 3 - nail dysplasia, 4 - sweat glands dysplasia. Ectodermal dysplasias are birth defects of ectodermal origin structures (including the skin and its appendages). Ectodermal dysplasia appears as several independent forms and as a number of diseases with different clinical picture.

Ethyological factors of ectodermal dysplasia are considered to overheat during pregnancy and to dehydration of pregnant woman's body. Ectodermal dysplasia - a congenital abnormality and can be transmitted genetically. However, the disease is not progressing throughout life, affects certain areas of the epidermis and does not spread to other. In some cases ectodermal dysplasia may develop after ultraviolet light and X-rays radiation, chemical irritation. Epidemiology of ectodermal dysplasia is 1: 100 000 newborns [2].

Common clinical symptoms of ectodermal dysplasias. Usually patients with ectodermal dysplasia may not sweat or may have decreased sweating because of a lack of sweat glands or their disfunctions. Children with ectodermal dysplasia may have problem with fever control. Mild desease or illness can cause extremely high fevers, as the skin can’t sweat and body temperature control is poor. Affected adult patients have low tolerance to warm environment and need special measures to keep a normal body temperature.

Other symptoms include:

1. Abnormality of nails
2. Abnormality or missing of teeth
3. Absent or decreased tears
4. Decreased skin color (lower pigmentation)
5. Heat intolerance

6. Inability to sweat
7. Large forehead
8. Low nasal bridge
9. Hearing loss
10. Non-adequate temperature regulation
11. Poor vision
12. Thin, sparse hair
13. Thin, dry skin [3].

Most common clinical forms. Today the next most common clinical forms of ectodermal dysplasia are known:

• Christ-Siemens-Touraine Syndrome (EDA-gene defect, K recessive): a combination of innate lack of sweat glands, partial or complete absence of teeth, hypotrichosis, bone deformities of the nose, cheilitis, and bluish skin pigmentation. Women-carriers of hidden gene during an iodine test show a special sweat glands distribution in the skin - in form of spirals or V-shaped often more pronounced on one side of the body. Synonyms: ectodermal hypohydrotic dysplasia, Christ-Siemens Syndrome, anhydrotic ectodermal dysplasia, Siemens syndrome, idiopathic multiform keratosis.

• Ectodermal Hydrotic Dysplasia (HED gene defect, R): abnormal development of the ectoderm manifested by dysplasia of epidermis and skin appendages - teeth dysplasia, rickets, cheilitis, conjunctivitis, congenital hair and nails dysplasia (nail thickening, curtailment or lack of hair on the head), often accompanied by palmo-plantar keratoderma, skin hyperpigmentation, strabismus and mental retardation; sweating is not interrupted.

Synonyms: Clouston syndrome, Naegeli-Franceschetti-Jadassohn ectodermal dysplasia, Clouston hydrotic ectodermal dysplasia.

Clouston syndrome may associate with deafness due to an extended deletions, exciting site of gene and connexin-gene HED (13ql2).

As usual ectodermal dysplasias occurs in two types:

1) above mentioned hypohydrotic dysplasia or Christ-Siemens-Touraine syndrome. Rapp-Hodgkin's syndrome with cleft lip, alveolar process, hard and soft palate is less common syndrome; hypohydrotic form may be inherited by X-linked recessive and rarely in an autosomal recessive manner. You can find in literature a description of familial cases of this disease and the development of ectodermal dysplasia occurrence for children of consanguineous marriages.

2) hydrotic dysplasia or Clouston syndrome; may be inherited in an autosomal dominant manner

Also about 20 rare form of ectodermal dysplasia (with impaired or normal sweating) are distinguised:

• Christianson-Fourie syndrome, differs from Clouston syndrome by lack of skin lesions;

• Bazan syndrome - ectodermal dysplasia without dermatoglyphic patterns of palms with nails dysplasia and four-fingered palmar crease.

• Ectodermal hypohydrotic Dysplasia combined with hypothyreoidism and corpus callosum agenesis. The main clinical symptoms: severe mental retardation, agenesis of the corpus callosum, hypohydrotic ectodermal dysplasia, primary hypothyreoidism, thyroid gland ectopia. Gormone tests show low concentrations of T3 and T4 - gormones, increased level of thyreotropic gormone [4, 5, 6, 7, 8].

Diagnosing. For the final verification of the diagnosis for children with suspections of ectodermal dysplasia in dental practice the following clinical studies are recommended:

- an X-ray study of the jaws (defined by the presence or absence of teeth folicules);
- perspiration test (to define sweat gland presence and function; these test are not allowed for children under one year old);

- microscopy of hair (in cases of ectodermal dysplasia only pivotal part of the hair without cortex may be observed).

Treatment and care. Specific treatment for patients with ectodermal dysplasia does not currently exist. General recommendations are: optimization of microclimate, eliminating of overheating, ussig of moisturizing skin creams and immunotherapy courses for respiratory diseases prevention.

In the cases of teeth form and eruption violations dentist consultation is recommended to provide a ptothetic treatment. Different kinds of syndactyly and cleft lip and palate surgical are indications for general, plastic and maxillo-facial surgeons consultations to correct the birth defect. Patients should avoid overheating and prolonged sun exposure [1, 2, 8].

Case report. A male child 6 years age came to dental clinic for pediatric dentist with a primary diagnosis — hypohydrotic ectodermal dysplasia, primary adentia (Fig.1-3).

Figure 1. 6-years boy with hypohydrotic ectodermal dysplasia: face appearence

Figure 2. Primary adentia on lower jaw.

Figure 3. Primary adentia on upper jaw.

Other clinical symptoms were identified in above-mentioned patient:

1) hypoplasia of the sweat glands, which manifested by decreased sweating and the

development of signs of overheating of the body during exercise and at higher ambient temperature;
2) hypotrichosis (hair covering disoder) - eyebrows and eyelashes were short, sparse and bright and were absent in some areas altogether; fur-like hair, with a weak pigmentation and slow growth;
3) partial alopecia;
4) late teeth eruption - out of sequence and timing, conical shape with caniniform tops of crowns of erupted teeth;
5) the total number of teeth was reduced to 5: 2 canine on lower jaw and 2 temporary molars and right upper canine were on upper jaw;
6) hypoplasia of the alveolar process of maxilla and alveolar part of mandible;
7) hypoplasia of the front and brain parts of the skull with the features of the "old man's face": a large forehead with a clearly protruding brow ridges and frontal mounds, small saddle nose with hypoplastic wings, sunken cheeks, blurred the boundaries of the upper and lower lips, lips were quite large and twisted;
8) ears deformity - pointed and stretched upward;
9) impaired skin structure - a thin, wrinkled and dry;
10) hypoplastic lacrimal glands - history was marked by dry eyes and conjunctivitis;
11) boy was followed up by a dermatologist about eczema;
12) patient had frequent rhinitis and acute respiratory infections (more than 6 cases per year) which may indicate a low immunity as well as the defects of the mucous glands in respiratory tract;
13) nasal passages had abundant crusting of nasal secretions;
14) blood analisys showed a decrease in hemoglobin levels, the color index of blood and signs of mild dysproteinemia;
15) patients had some mental retardation, and decreased mnemonic abilities
16) he had closed character and was and socially disoriented;
17) speech and pronunciation were disodered by primary adentia and and constant nasal congestion;
18) mild hearing loss caused by the periodic formation of cerumen in the ear canals;
19) myopia.

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THE ANALYSES OF TYPICAL APPROACHES OF PAIN SYNDROME TREATMENT IN SURGICAL DENTAL

PATIENTS IN CONDITIONS OF HOSPITAL AND PERSPECTIVES OT THEIR FURTHER IMPROVEMENT

O.J. Mokryk, V.M. Horytskyj

Danylo Halytskyi Lviv National University, Lviv, Ukraine

Summary: The aim of this research was to analyze of typical approaches of pain syndrome treatment connected with surgical procedures in maxillofacial area. The effectiveness of the most frequently used non-narcotic analgesics was studied depending on the nature of the pathological process in patients. Based on data from the literature and the results of their research, proposed new directions to improve medical treatment of pain.

Keywords: pain syndrome, antinociceptive system, surgical interference, maxilla-facial area, non-narcotic analgetics.

Introduction. Treating of the pain syndrome in surgical interventions is one of the actual problems of the modern medicine [12, 15, 17]. Despite the growing interest in the diagnosis of pain and its treatment, a significant expansion of analgesics arsenal, quality of postoperative analgesia is often unsatisfactory [12, 10]. It was established that late eliminated postoperative pain is the cause of stress reactions in the organism, evokes an unfavorable postoperative period [4, 7, 11, 17]. Lack of nociceptive afferent impulses flow block causes considerable tension (failures) of regulatory mechanisms in patients [4, 18]. Expectation of the pain is often accompanied by anxiety and depression, somatic symptoms, worsening of the life quality that prolongs postoperative rehabilitation [2, 6]. Therefore, it is expedient to direct the physician's efforts not on the emergency elimination of pathological reaction on pain, but prevent it. It's obvious that successful postoperative analgesia is necessary not only to choose an effective analgesic agent, but also the most appropriate method of its application. Rapid elimination of postoperative pain can reduce the number of postoperative complications, reduces the time of hospitalization and treatment costs [9, 17].

It is known that peculiarity of maxillofacial area tissues is complicated structure of sensitive innervations. Most surgical diseases of the maxillofacial area are usually accompanied by severe clinical pain symptoms and require adequate anesthesia not only for the surgical treatment, but also in the postoperative management of patients. Therefore, considerable scientific and practical interest is the study of the therapeutic effectiveness of the most common surgical dental practice analgesics in the treatment of pain in patients after performed surgery.

Purpose. Based on a retrospective analysis of medical cards of patients treated in the Department of Maxillofacial Surgery Lviv Regional Hospital, to establish common approaches in the treatment of pain during intra - and postoperative period, to evaluate the effectiveness of the applied drug schemes of analgesia. Relying on the results of own

observations identify new approaches of their improving.

Object and methods. To achieve this goal we conducted a retrospective analysis of 950 medical of patients that underwent surgical treatment in the department of Maxillofacial surgery of Lviv Regional Hospital during the period from 2012 to 2014. In particular, for the review were selected medical records for basic nosologies: acute purulent inflammation - 320 cases, impacted wisdom teeth - 170 cases, traumatic injuries of the facial skeleton - 250 cases, benign tumors of the jaws - 210 cases. During the study of medical cards main attention was drawn to the applied drug schemes of pain treatment at the time of pain occurrence in patients after operations and on its intensity. Assignments were focused on doses, methods and multiplicity of inputting of specific analgesics and adjutants - drugs that potentiate the therapeutic effect of analgesics [15]. The duration of their administration to patients was calculated.

To evaluate the effectiveness of new processed medication schemes of analgesic therapy, comparing with traditional, testing was conducted on 75 surgical dental patients, which underwent operations of atypical removal of the wisdom lower third molars. Obtained results compared with those of patients (60 males) with traditional treatment. Selecting of this operation to analyze the different ways of pain treatment caused by the fact that operation volume and level of trauma in the vast majority of patients are the same. Early postoperative period is accompanied by severe inflammatory reaction and intense pain symptoms in patients.

Results and discussion. The study of medical appointments revealed that further the most common premedication scheme of patients' preparation for the surgical dental procedures under local anesthesia is the combined use of Analgin and Dimedrol - in 69% of cases. Narcotic analgesic Promedol was used for the drug analgosedation in 23% of patients during their preparation for emergency and routine dental operations - this was so in all cases where surgery was performed under general anesthesia in 14% and 9% of patients in which operations were performed under local potentiated anesthesia. Only in 8% of patients with different nosology during the sedation new analgesics with central mechanism of action on nociceptive system Nefopam was appointed (Fig. 1). To reinforce the effect of narcotic and non-narcotic analgesics and achieving of sedation in patients traditionally administered Dimedrol (79% of cases), and in 25% of patients for elimination psychological and emotional tension - Sibazon. Among other drugs, adjuvant to analgesics, which were administrated in postoperative period in the medical cards were recorded: Dexamethasone (28% of cases), Traumeel - S (17% of cases), Gabapentin (4% of cases). Usage of the last one has been successful in the treatment of neuropathic component of pain. In the postoperative period when pain appeared Ketorolac was usually administered - in 42% of cases. Also, often was applied Ketoprofen (35% of cases). When treating patients with traumatic injuries of the facial bones and acute inflammatory processes superiority was attached to Diclofenac - 23% of cases (Fig. 1).

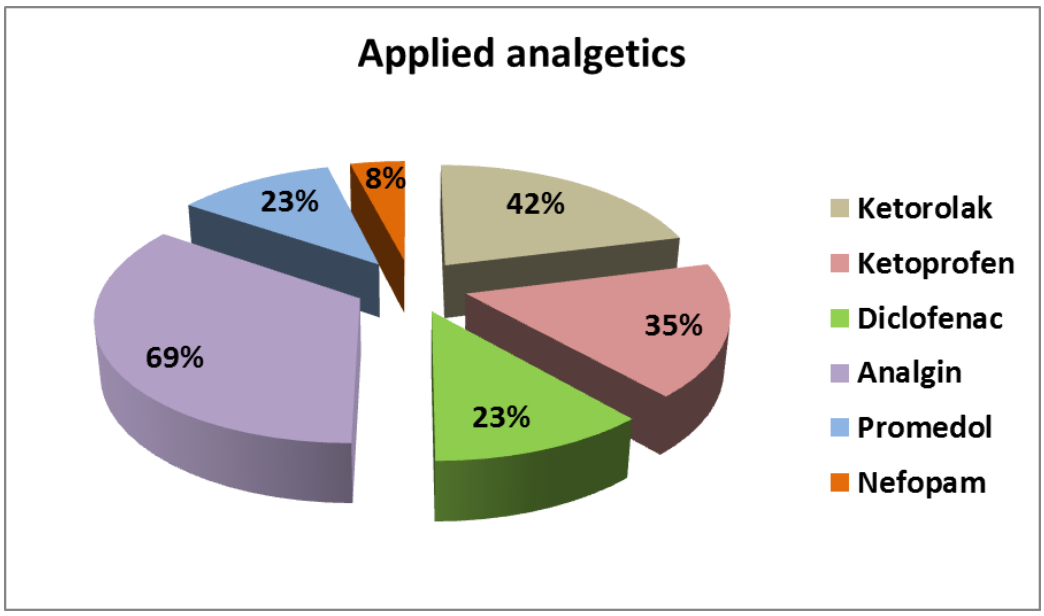

Figure 1. Frequency of analgesics appointments in the Maxillofacial clinic for the investigated period

Thus, the most common in the maxillofacial clinic remains following scheme of combination analgesics and adjuvants: Analgin with Dimedrol administered for sedation of patients, and by special indications - Sibazon is added (symptoms of emotional stress). After operations under the local potentiated anesthesia when manifestations of pain take place Ketoprofen or Ketorolac are applied. To reduce the inflammatory reaction hyperergic patients received Dexamethasone, to enhance the action of these drugs - Traumeel - S.

We revealed that the largest patients with purulent inflammatory diseases formed the largest group (11 %), which took Ketorolac during the longest period – up to 10 days, for the odontogenic phlegmons, acute osteomeylitis of the maxillofacial area treatment. Duration of analgesia therapy in traumatic patients depends on their general condition. In particular, 7% of patients with traumatic fractures of the facial skull with moderate severity condition the pain syndrome was completely eliminated during 10day of treatment, 56% of patients - during 7 days, and - 22% of cases – during 5 days. In mild trauma (fractures of the alveolar process, after reduction of temporomandibular joints dislocation etc) pain was eliminated during three days. In patients after removal the wisdom tetth and benign jaw bones tumors (radicular and follicular cysts, odontomas) pain often disappears on the 5th day of post-operative treatment.

Until now it was believed that the intensity and duration of postoperative pain symptoms depends on the type of pain perception in patients with traumatic performed surgery and the nature of the pathological process. According to modern ideas about the mechanisms of pain, any surgical trauma can cause long-term and sustainable changes in segmental and suprasegmental structures nociceptive (central and peripheral sensitization) functions, resulting in development of hyperalgesia, manifested by the formation of intense pain and an increasing needs for analgesics [4, 8, 9, 12]. Traditional methods of surgical pain treatment in most cases provide empirical appointment analgesics

based on the personal experience of the doctor, his awareness in modern medications. Identified approaches, we believe, have serious drawbacks. The basic is "secondary" postoperative analgesia to those already developed pain, based on a surgical trauma induced by hyperactivation of nociceptive structures of the central nervous system [1, 9, 12, 18, 19]. Obviously, the quality of postoperative analgesia using such tactics of treatment do not meet contemporary requirements of anesthesia. To solve the problem of postoperative analgesia adequacy only when realizing the following concepts in clinic: 1. The concept of preventive analgesia and 2. Concept of multimodal analgesia [8, 12, 17, 20]. The concept of preventive analgesia is to prevent the development of post-operative pain and minimize its intensity, starting therapeutic measures (analgesic therapy) before the surgery. The concept of multimodal analgesia involves the simultaneous appointment of two or more analgesics and / or methods of anesthesia that have different mechanisms of action can achieve adequate analgesia with minimal side effects. Currently, these methods of analgesia are of the top priority when choosing a method of postoperative anesthesia based on appointment of non-opioid analgesics to patients with pain of high intensity combined with the usage of opioid analgesics [7, 8, 12, 20].

To activate anti-nociceptive structures of the central nervous system that regulate the conduction of nociceptive impulses, a variety of medicinal agents can be used. To solve this problem, we have developed and tested in clinic several schemes of analgesia stimulation using modern narcotic and non-narcotic analgesics that affect the central structure autoanalgesia: Nalbufin, Infulhan Nefopam. Furthermore, the assessing the efficacy preventive Nefopam injection in combination with non-steroidal anti-inflammatory Xefokam and Dalargin - synthetic analogue of D - Leucine – encephalin was done. According to the literature data, preventive intravenous injection of Dalargin increases resistance to the injury, provides stress-limiting effect [16]. Xefokam (Lornoxikam) - a drug with expressed analgesic effect close to opiates. Established that it actively stimulates the production of endorphins and dynorphin that is physiological way of pain syndromes elimination of intensity and localization [3, 13]. This analgesic even in large doses has no opiate-like depressive effect on the central nervous system, does not cause drowsiness, respiratory disorders and addiction. A pronounced inhibition of cyclooxygenase and simultaneously active stimulation of endogenous antinociceptive system makes Xefokam one of the most effective and safe contemporary analgesics, that was confirmed during numerous clinical studies, including placebo-controlled researches in many European clinics [1, 3, 7, 13].

In 75 scheduled surgical dental patients, who underwent operations of atypical removal of impacted lower third molars the application of two schemes of pain treatment was conducted. Patients were divided into two groups. The first group - 35 patients that during premedication were administered intramuscularly 10 mg of Nalbufin - opioid analgesic of agonist-antagonist opioid receptors. Immediately after the operation patients received 100 ml Infulhan (Paracetamol) by intravenous injection, which commits an analgesic and antipyretic effect. Paracetamol blocks cyclooxygenase (COX) I and II, mainly in the central nervous system, affecting the pain centers and thermoregulation [10]. In the second group (40 patients) for activation of antinociceptive system (opiate-ergic component) and providing stress protection during the three days before the surgery,

patients was administered 1 mg of Dalargin endonasally by electrophoresis. During premedication we tested Nefopam (Acupan) - a drug with a strong and fast-acting analgesic effect. It inhibits the reuptake of Dopamine, Norepinephrine, Serotonin at synapses of pain centers of the brain. In contrast to narcotic analgesics Nefopam does not inhibit respiration and peristalsism does not cause habituation [5, 14, 21, 22]. It is appointed intramuscularly per 20 mg. Immediately after surgery, all patients of the group were administered preventively intravenous injections of Xefokam (Lornoksikam) - 8 mg and Dalargin (was injected intravenously - 1 mg.). Obtained results were compared with two control groups of patients (30 persons in each), which followed the traditional schemes of treatment - during premedication intramuscular injections of Analgin or Promedol were used and, in the postoperative period, with the appearance of pain Ketorolac or Ketoprofen were administered. Lasting of pain postoperative syndrome was calculated. Comparative evaluation of the results is shown in Figure 2.

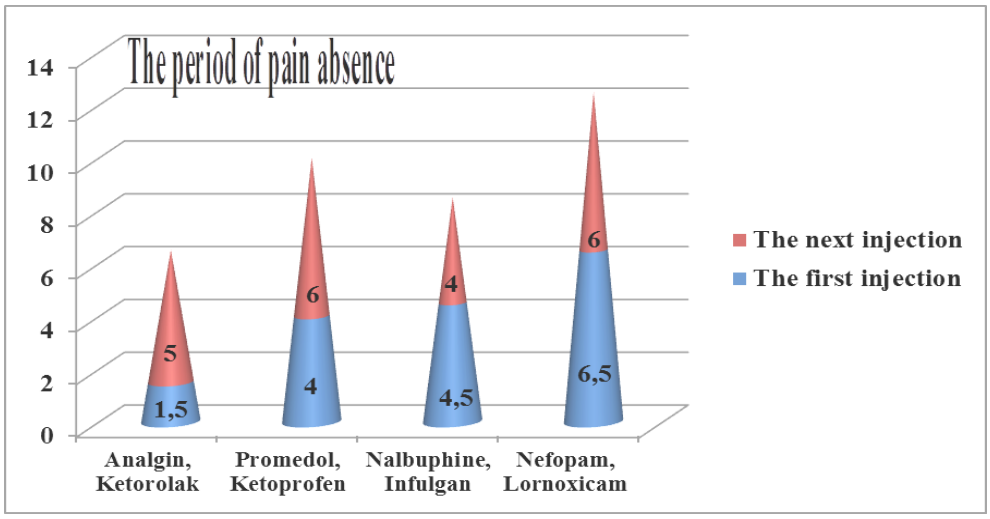

Figure 2. The appearance of pain syndrome in patients after planned operations of atypical removal of impacted lower teeth at different schemes of analgesia

The inclusion of non-narcotic analgesics into the premedication schemes with exposure to the central control structures of pain - Nefopam or opioids: Promedol, Nalbufin that facilitate the occurrence of postoperative period - lower perceptual component of pain and reduce the severity of stress-response of the organism on the injury. Established that the strongest analgesic effect is observed in patients in an attempt to prevent the formation of peripheral and central sensitization (hyperalgesia) in the combined use of analgesics with the central mechanism of action and inhibition of prostaglandins (Infulhan, Xefokam) and adjuvant Dalargin with subsequent injection of the preventive mode. Postoperative using of the non-steroid unti-inflammatory agents as a method of "preventive" analgesia increases the duration of analgesics - from 4.5 to 6.5 hours, which are injected in comparison with the use of typical schemes of analgesia (Fig. 2).

Conclusions. Revealed methods of postoperative pain syndrome treatment, used in stationary surgical dental patients are based on traditional approaches. Still remains a significant percentage of long-term use of non-narcotic analgesics in operated patients because of resistant pain. The introduction into clinical practice new methods of postoperative analgesia, differentiated application of systemic analgesics and adjuvants will enhance the effectiveness and quality of analgesia, reduce the number of complications associated with postoperative pain and time their treatment.

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STATE OF HUMORAL IMMUNITY OF CHILDREN WITH THE SYSTEMATIC ENAMEL HYPOPLASIA, WHO LIVE IN POLLUTED AREAS OF IVANO-FRANKIVSK REGION

Yu. A. Labiy, G. M. Melnychuk

SHEI "Ivano-Frankivsk National Medical University", Ivano-Frankivsk, Ukraine

Summary: The immune system of the child suffers from an effect of wide range of xenobiotics from polluted environment. This indirectly affects the function of bone, endocrine and other systems of the body, which leads to the imbalance of adaptation processes and chronic pathological conditions, including systemic enamel hypoplasia (SEH) of teeth. Levels of immunoglobulins of A-, M-, G- classes in blood plasma were defined by radial immunodiffusion to study the state of healthy children immunity from relatively clean district of Ivano-Frankivsk region and to establish the interrelation between the level of immunoglobulins in the blood plasma that are responsible for humoral immunity of children suffering from SEH and nature of their habitat contamination. The study involved 133 children suffering from SEH, who live in different by nature of anthropogenic pollution parts of Ivano-Frankivsk region, and 63 children from relatively pure area which was selected as a control one. It was found a significant decrease of immunoglobulin indicators of all classes in blood plasma of residents from contaminated districts in comparison with the data of residents from conditionally clean district. It was found a dependence of the level of immunoglobulins on the type of pollution. The least affected is the immune system of children, living in district, contaminated with inhalant xenobiotics. The worst state of the immune system was found in children, residents of the district with chemical and radiological nature of anthropogenic load, that indicates an extremely harmful effects of combined contaminations on the child's organism. The founded regularities allow to develop the complex of measures for the treatment and prevention of adaptation processes violations, which can lead to the formation of tooth enamel defects.

Keywords: children, systemic enamel hypoplasia, immunoglobulins of A-, M-, G- classes, environmental pollution.

In the 90 years of the twentieth century doctors faced with a new global problem associated with damaging effects of increasing range of environmental pollutants on the immune system. An increase in immune-mediated human diseases, including systemic enamel hypoplasia (SEH) of teeth in children is associated with the effect of the xenobiotics [7].

Children's health is one of the most sensitive indicators and criteria of influence the environment and lifestyle on human population [1]. This has a particular importance in assessing environmental quality in industrial areas where the population is undergoing significant anthropogenic pressure [3].

Human immune system is one of the most important mechanisms of organism adaptation to constantly changing environmental conditions. The peculiarity of the child's immune system lies in the fact that it is in the process of formation and development; this determines the uniqueness of its response to antigenic stimulation. The immune system provides not only the protection against infections, but also has the function of control and support of the antigenic homeostasis of organs and tissues [5].

Like all functional body systems, the immune system possess a certain autonomy and capacity for self-regulation and is closely linked to the activities of bone, endocrine and other body systems. There is a certain mutual influence and dependence between them [8]. A variety of environmental changes (cold, air pollution, etc.), food, habits, and numerous infections have a significant impact on immunological resistance of children' organism. These changes are not only parts of the general changes in physiological systems of the child, but are also dependent on them, and are adaptive in its biological significance. [9]. Some mechanisms of natural immunity, which very subtly react to external actions and violations of a constant internal environment, may serve as objective indicators of general physiological condition of the body and are used as a diagnostic test to indicate the hidden pathological or adaptive processes [2].

In this regard, the **aim of our work** was the establishment of the relationship between the level of immunoglobulins which are responsible for humoral immunity in the blood plasma of children suffering from SEH and the nature of territory contamination of their residence and examining the state of immunity of healthy children from relatively clean areas of Ivano-Frankivsk

Materials and methods. Immunoglobulin level in blood plasma IgA, IgM, IgG was studied by Mancini method of radial immunodiffusion in order to establish the features of humoral immunity of patients with SEH and healthy ones. [6]. The object of the study were children with different degree of SEH intensity of permanent teeth: 27 pupils from Zadnistryanske village of Galych district suffer from a high air pollution caused mostly by emissions into the atmosphere of coal combustion gases at Burshtin power plant [4]; 26 children from the village Verchnia of Kalush district, residing in the territory contaminated with products of chemical industry- organic macromolecular compounds from activity of the plant-giant "Lukor"; 36 children of the village Javoriv Dolina district that is a locality with heavy contamination of drinking water with harmful substances from oil and gas production complex; 44 children from the village Stetseva of Snyatin district, which, according to the Resolution of the Cabinet of Ministers of Ukraine №106 of 23 July 1991, assigned to the zone of enhanced radiation monitoring (IV zones of radiation contamination after accident at the Chernobyl AES) [10]. In this village and in the adjacent areas were detected spots of radiation contamination up to 5 Curie / km2. As a benchmark we used data on humoral immunity of 63 healthy children from relatively clean Horodenka district. Age of children ranged from 6 to 15 years.

Results and discussion. Our research revealed, that level of IgA in healthy children was 2,01±0,09 g/l, and in all children with SEH from contaminated areas together – 1,72±0,04 g/l. The difference between the rates makes 1,17 times ($p<0,01$), that is shown in the figure 1.

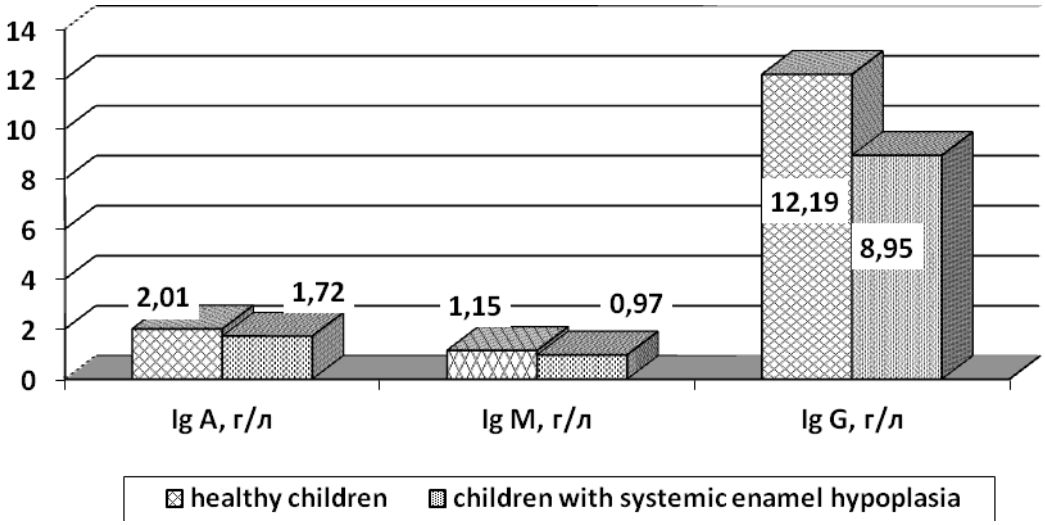

Figure 1. Humoral immunity status in healthy children and in all children with systemic enamel hypoplasia of permanent teeth, living in polluted areas of Ivano-Frankivsk region.

The data on IgM content in plasma in children with SEH, differs from one in healthy children in 1,19 times ($p<0,001$), in healthy children making 1,15±0,09 g/l, and in all sick children, who are under the influence of different xenobiotics,– 0,97±0,01 g/l. In the terms of the number of IgG was found, that difference between the data of healthy children and children with SEH, from anthropogenically polluted areas, makes 1,36 times ($p<0,001$), and the rates come to 12,19±0,13 g/l and 8,95±0,18 g/l in accordance.

Therefore, the analysis of the humoral immunity indicators in all children with SHE found that the immunoglobulin level in patients significantly reduced in comparison with the one in healthy children.

The changes of the immune parameters of the children with SEH from contaminated areas are separately listed in the chart 1. It was detected that the level of IgA in blood of sick children have been reduced against the indicators in healthy children from all districts: from 1,1 times ($p_1>0,05$) – in Galich district, 1,12 times ($p_1<0,05$) – in Dolyna district, 1,21 times ($p_1<0,01$) – in Kalush district, to 1,22 times ($p_1<0,001$) – in Snyatin district. There wasn't found a significant difference between these indicators in districts with different nature of pollution.

After the analysis of the IgM content in blood plasma of children with SHE there was found a significant difference between indicators of all contaminated districts and conditionally clean district. Herewith, the lowest level of IgM was in Snyatin district (0,90±0,02 g/l), which differs in 1,27 times form the indicator in healthy children form Gorodenka district (1,15±0,03 g/l), $p_1<0,001$. Indicators of Galich district appeared to be the largest among the contaminated districts (1,03±0,04 g/l), which although significantly differed from those in conditionally clean district, but were lower than they in 1,12 times ($p_1<0,05$). Significant difference between the indicators of IgM from different polluted districts was not observed.

Table 1

Humoral immunity indicators in healthy children and children with systemic enamel hypoplasia of permanent teeth, living in districts of Ivano-Frankivsk region with different environmental pollution (M±m)

Indicators in blood serum	Healthy children	Children with SEH			
	Gorodenka district, n=63	Galich district, n=27	Dolyna district, n=36	Kalush district, n=26	Snyatin district, n=44
Ig A, g/l	2,01±0,09	1,82±0,09 $p_1>0,05$	1,79±0,07 $p_1<0,05$ $p_2>0,05$	1,65±0,11 $p_1<0,05$ $p_3>0,05$ $p_5>0,05$	1,64±0,06 $p_1<0,001$ $p_4>0,05$ $p_6>0,05$ $p_7>0,05$
Ig M, g/l	1,15±0,03	1,03±0,04 $p_1<0,05$	1,01±0,03 $p_1<0,01$ $p_2>0,05$	0,96±0,03 $p_1<0,001$ $p_3>0,05$ $p_5>0,05$	0,90±0,02 $p_1<0,001$ $p_4>0,05$ $p_6>0,05$ $p_7>0,05$
Ig G, g/l	12,19±0,24	9,12±0,45 $p_1<0,001$	9,39±0,38 $p_1<0,001$ $p_2>0,05$	8,71±0,38 $p_1<0,001$ $p_3>0,05$ $p_5>0,05$	8,95±0,18 $p_1<0,001$ $p_4>0,05$ $p_6>0,05$ $p_7>0,05$

Note. Probability of indicators difference is displayed: p_1 – all districts to the quantity of healthy children from Gorodenka district; p_2 – Galich district to the quantity of Dolyna district; p_3 – Galich district to the quantity of Kalush district; p_4 – Galich district to the quantity of Snyatin district; p_5 – Dolyna district to the quantity of Kalush district; p_6 – Dolyna district to the quantity of Snyatin district; p_7 – Kalush district to the quantity of Snyatin district.

The level of IgG in blood plasma of children with SEH, was also significantly lower in comparison with the same in conditionally clean district ($p_1<0,001$). The indicators of Dolyna district differs the least from the data of healthy children (the increase was in 1,30 times), and the most - in Snyatin district (in 1,36 times) and in Kalush district (in 1,39 times). There wasn't found a significant difference between IgG content in blood plasma of children with SEH form districts contaminated with different xenobiotics.

So, the data obtained by us allows to suggest that environmental pollution contributes to a significant reduction in humoral immunity indicators, that indicates an immune system depletion of children, living in anthropogenically polluted areas. Herewith, the least affected is the immune system of children, residents of Galich district that is contaminated with inhalant xenobiotics. More damaged is the immune system of children, living in the territories where the water and the soils are contaminated with chemical xenobiotics, namely in Dolyna and Kalush districts. The worst condition of the immune system was detected in children from Snyatin district. That indicates that the combination of chemical and radiation contaminations have

an extremely harmful effect on child's organism.

Conclusions.

1. It was found the reduction of IgA level in blood plasma of children with SEH from all districts with a difference from healthy children from 1,1 times ($p_1>0,05$) - in Galich district to 1,22 times ($p_1<0,001$) – in Snyatin district.

2. The IgM content in blood plasma of children with SHE is significantly smaller in all polluted districts, especially in Snyatin district (in 1,27 times; $p_1<0,001$).

3. The amount of IgG of all children with SEH was significantly reduced regardless of xenobiotics, however, in comparison with healthy children, this indicator was especially reduced in Kalush and Snyatin district (in 1,39 and 1,36 times; $p_1<0,001$).

4. All eco pathogens, which have been studied by us, significantly affect the humoral immune of children suffering from SEH, however, the immune system of children exposed to inhalative xenobiotics was affected the least, and the combined chemical - radioactive contamination that occurs in Sniatyn region has a particularly negative impact on the immune system of children.

Prospects for further research.

Prospects for further research is the development and implementation of therapeutic and preventive complex for correction of the detected violations.

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ARGUMENTATION OF DENTITION DEFECTS SYSTEMATIZATION WITH UNFIXED ALVEOLAR HEIGHT USE IN COMPLEX PROGRAM OF DENTAL IDENTIFICATION AND REGISTRATION OF DENTAL STATUS

Y. Kostenko, A. Kenyuk

Uzhgorod National University, Uzhgorod, Ukraine

Summary: Registration and identification process of dental status on the basis of quantitative objective criteria performed by retrospective analysis of the consequences of iatrogenic interventions and changes in the teeth-jaw system remains actual problem of forensic odontology and expert evaluation. Solving the above extensions could provide facts for forensics expert in matters of dental nature, and can be used to record changes of the teeth-jaw system during integrated peer evaluation of dental treatment. Therefore checking existing principles of dentition defects classification and the development of customized categories for systematization of dental status during its' changes is an open research and practical field for implementation and synthesis of analytical expertise of a dentist and a forensic expert.

Keywords: dentition defects, systematization, dental identification.

Introduction. Way of dental manipulations implementation goes through the introduction of a range of specific methods and techniques that depending on the technological level and allows accurately and efficiently identification for a range of micro- and macroscopic features of individual teeth, dentition, jaws, etc [5]. The latter serves as the basis of identification system for individual dental status. At the present time databases of computer identification by dental status (CAPMI, WINID, NCIC2000, NDIR, NamUs, VICTIMS, NAMPN, DOE, EDAN,, IDIS, ADIS, INTERPOL DVI, CPIC, NCMA) [2, 6, 12, 13] are not using any principles of categorization based on dynamic changes of dental status or its' static defects as aedentia or tooth-alveolar elongation. Also the disadvantages of the above mentioned systems and applications are an excessive number of codes, the need to unify software platforms, local adaptation, lack of individualization. So development of grouping algorithm for dentition defects will simplified the process of search sample formation complex analysis of panoramic X-ray photos and clinical review.

The ability to address the issue of identifying persons with a modified dental status depends on the degree of change due to disease, or physiological changes of the treatment, as well as possibilities of comparison required identification points and

fragments, which will determine the level of compliance with the efficiency of identification [11, 12]. According to Keiser-Nielsen for a positive result there is a need of dental identification according at least 12 similar points/fragments mapping which will be held under the criterion of "identity set" [7, 8, 9] (Fig.1.). Morphological and functional changes of the teeth-jaw system, resulting from partial and complete edentia require prosthetic treatment in order to restore the integrity of the dentition, and thus stabilize the occlusal relationships, miostatycal reflexes and joint balance. On other hand without preview categorization of real dental status any other it changes will formed greater amount of samples for further analyses during dynamic atrophy, dental implantation, or using of full dentition with surgical correction of tooth-alveolar elongation.

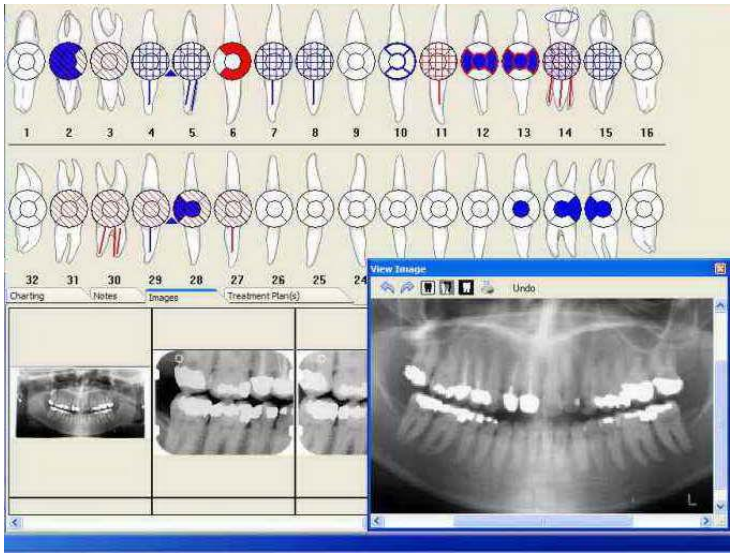

Figure 1. Digital registration of dental treatment results

Also any clinical assessment of the results of dental prosthetic documentation has drawbacks of the subjective grading, unreliable and inaccurate registration of descriptive characteristics in the medical official forms 043/o and 039/o, the filling of which is in accordance with the protocols of regulated samples of dental care to the population. But specifying objective grades of dental status using principles of categorization of dentition defects will decrease number of unexplained results of dental identification.

Objective: To test the adapted dentition defects systematization in patients with unfixed alveolar height in relation to complex program of dental identification and registration of dental status. Identify opportunities of abbreviation search sample by taking into account the characteristics of each categorical class of systematization proposed as a primary element of the expert evidence criteria formation. To develop an algorithm for expert evaluation of dental interventions in stage of grouping patients in a specific class of offered systematization.

Materials and methods. For primary grouping of patients with dentition defects, unfixed alveolar height and available tooth-alveolar elongation based on clinical observations and a retrospective analysis of epidemiological studies, clinical and radiological diagnostic methods, scanning

techniques of dental identification, proposed the following systematization:

* I class - Complete secondary edentia

* II class - Complete secondary edentia of one of the jaws with the presence of teeth on the opposite side:

- Subdivision 1 - Complete secondary edentia of maxilla with preserved frontal or lateral portion of the mandible:

A) with tooth-alveolar elongation;

B) without tooth-alveolar elongation;

- Subdivision 2 : Complete secondary edentia of mandible with preserved frontal or lateral portion of the maxilla:

A) with tooth-alveolar elongation;

B) without tooth-alveolar elongation.

* III class - The one stored teeth or groups of teeth on both jaws, which do not form antagonists pairs:

- Subdivision 1 - Without tooth-alveolar elongation:

A) in the frontal area

B) in the lateral area

C) in frontal and lateral areas

- Subdivision 2 - With tooth-alveolar elongation:

A) in the frontal area

B) in the lateral area

C) in frontal and lateral areas

Radiographic studies were conducted using "Planmeca Pro One". All patients panoramic X-ray photos were preclassified according to forensic systematization of dental status proposed by Kostenko-Mishalov to assess the possibility of further scanning analysis.

On the studied panoramic X-ray photos were determined constant and proportional anthropometric indexes considering topography between mental foramens and proposed geometric model building perpendicular tangents, ascending and descending lines. These methods provides identification of the dental status even in its intended full or pathological changes, and numerically evaluation of the alveolar atrophy level of the mandible in the frontal area with the ability to determine the absolute and relative errors of the results and intermediate calculations [1, 3, 4, 10].

In the presence of ceramic and metal-ceramic prosthetic dentures and single crowns registration of the soft tissue changes was performed using the method for determining changes in the gingival margin abutment teeth with non-removable prosthesis with carrying out measurements of the total height of the cutting edge to the bottom of the epithelial and connective tissue attachment in accordance with the formulas in dynamics of the immediate and long-term outcomes.

Dynamic registration of changes in the architectonics alveolar part of the mandible on digital panoramic X-rays carried out by graphical analysis of the proposed designation of base points A and B, which are located in the center of the visible projection of the mental foramen, the construction of the axes X and Y, the point O as the center between mental horizontally and related direct to approximal teeth surfaces constructed with base points A, B, O. For each point on the distal and mesial surfaces of teeth were mathematically calculated indexes as the ratios of the tangents to each point of contact surfaces with different initial coordinates of point O, A and B, describing the level of the alveolar bone of the mandible in a given time t1. Similar indices and calculation were registered at some time t2, and their numerical ratio conduct an objective assessment of atrophy of the alveolar part of the mandible due to pathological processes or results of a comprehensive dental treatment.

Definition of interalveolar height was performed using anthropometric methods of performance measurement M1 (horizontal distance between the pupil), M3 (the vertical distance between the eyebrows and the nose wings), M5 (distance between the corners of the mouth down the red rim lip) and M10 (twice the width of the eye), which can be considered the most accurate and informative among others.

Presence and degree of tooth-alveolar elongation, depth of incisal overlap, type of occlusion, condition of oral mucosa by Suplee and aesthetic features of the future prosthetic restoration were clinically conducted based on compensation atrophy of the alveolar part.

Statistical analysis of the data was carried out using the recommendations of the Mincer O., Voronenko Y. (2003) and standard statistical programs «Statistica 6.0» and «Microsoft Excel 2003 » (Microsoft Office 2003).

Results and discussion. Through systematic analysis was carried out the possibility of specification for Group V (Full dentition defects) of systematization by Kostenko-Mishalov by using categories of grouping dentitions defects with unfixed interalveolar heights and present tooth-alveolar elongation. The data should by submitted in electronic form of forensic odontological cards in graph "specific description", followed by the process of categorizing a computer algorithm:

- Classification according to the Kostenko-Mishalov
- Subdivision by classification of Kostenko-Mishalov for Group 5
- Class offered by systematization of dentition defects and adapted categorization
- Subdivision taking into account the presence of tooth elongation

Grouping dentition defects reduces the formation of primary sampling engine and repeated ortopantomograms for the purpose of identifying dental status or dynamic registration status using scanning techniques and graphical analysis of digital panoramic X-rays photo (Fig.2.).

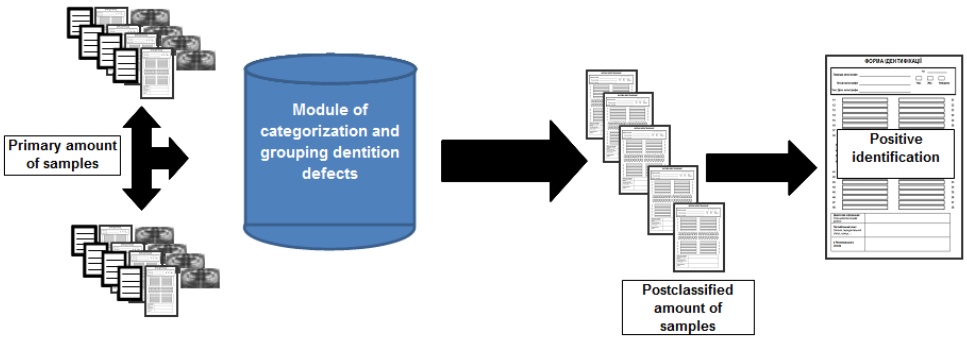

Figure 2. Principles of reducing research sample by using categorization a grouping dentition defects

The prospect for further research is the ability to design an algorithm adapted to provide orthopedic care including belonging to a particular class of systematization followed by evaluation of the effectiveness of its use. Using the proposed algorithm also facilitates the systematization comprehensive

peer review quality of the dental treatment and odontological identification by means of individualizing patient status and grouping of specific clinical situations with regard to the prevalence of tooth-jaw abnormalities.

Therefore, the prospects for further research using forensic dental status classifications are comprehensive methodological approach to peer review and record the condition of the teeth-jaw apparatus to provide for law enforcement authorities information of medico-biological nature.

Conclusions. With the developed dentition defects systematization in patients with unfixed interalveolar height ratio and tooth-alveolar elongation dental status may be documented on the basis of individual features that can be used in assessing the expert quality of dental care, as well as during the commission forensic medical examination in order to providing law enforcement authorities information of medical and biological nature. Categorization also call for increasing the level of control over the quality of care and results of treatment, and the addition of evidence of clinical examination for diagnosis, treatment and rehabilitation of patients with unfixed interalveolar height ratio. The data can be entered in the form of forensic odontocards as a specific description that justifies individualized identification and specification of specific elements of the dental status or the results of its changes. The above characteristics of the dental status condition and its objective interpretation of changes may be used as criteria for optimize expert evaluation of dental status changes as results of complex dental treatment of pathologies.

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EVALUATION OF THE QUALITY AND ACCESSIBILITY OF PROVISION MEDICAL CARE AT THE REGIONAL LEVEL

R. Y. Pohorilyak, A.P. Gulchiy

Uzhgorod National University, Department of Public Health, Uzhgorod, Ukraine
National Academy of Sciences of Ukraine, Chief Scientific Coordination Management NAMS of Ukraine, Kiev, Ukraine

Summary: The author, as an example of the Transcarpathian region, an assessment of the quality and availability of medical care at the regional level, using quality indicators. Discordant established trend indicators.

Keywords: indicators of quality of care, quality and accessibility of health care.

Introduction. Preservation and development of public health as a decisive factor in ensuring economic and social development is one of the most important social functions of the state. The implementation of this function occurs through the activities of the health sector, for which the evaluation of domestic and international practice, using indicators such as quality and accessibility of health care [3, 5].

However, despite all the declarations on the need to improve public health and taken to solve this problem numerous legal acts, the situation regarding the provision of medical care in the country has not significantly improved. Therefore, the study of the quality and availability of care, identifying the main cause of the decline is crucial to improve the functioning of the health and development strategies of reform.

Right of access to care as indicated in Amsterdam Declaration of the European Bureau of the World Health Organization, is one of the most important social rights.

International documents the availability of health care is seen as a multidimensional concept that includes a balance of many factors in the framework of

strong practical limitations due to the peculiarities of resources and capabilities. These factors include: personnel, finance, vehicles, and freedom of choice, social literacy, quality and distribution of inputs. The balance of these elements that maximize the quantity and quality of received population actually care, and determine the content and extent of its availability [2, 4].

At the present stage of development of the health quality of care is considered to be the main objective function while the criterion of health system from its lower level - health care setting , the top - the Ministry of Health of Ukraine .

Improving the quality of health care in Ukraine - one of the current challenges. The National Action Plan for 2011 to implement the program of economic reforms in 2010 - 2014 " Prosperous Society, Competitive Economy, Effective State", approved by Decree of the President of Ukraine on April 27, 2011 № 504 /2011 and the Resolution of the Cabinet of Ministers of Ukraine February 2, 2011 № 389 " on approval of the development of investment and innovation activity in Ukraine " the main directions of the reform of health care , including increasing the availability of health services , improving the quality of health services , improving the efficiency of public finance [1]

Purpose - to assess the quality and accessibility of secondary and tertiary healthcare Transcarpathian region according to the indicators.

Materials and methods. Materials and information have become the basis for research reports form number 20 and number 21- for 1995-2010 The results obtained by using theoretical methods (analysis and synthesis , organizing and modeling), empirical methods (social, observational and peer reviews) and statistical methods (variational and alternative statistical correlation analysis).

Results and discussion. Evaluation of the quality of medical services performed in accordance with the benchmarks established by the order of Ministry of Health of Ukraine from 02.11.2011, № 743. Performance clinics, maternal deaths, perinatal mortality and early neonatal mortality as indicators of secondary and tertiary health care.

The main institution that provides assistance is primary medical help clinic (office, clinic, office). In addition, in recent years formed a network of family medicine, under which assistance is also provided primary medical help for adults and children. Therapeutic and preventive care provided by these facilities are the most accessible and widespread form of health care. The current system of outpatient care provides preventive orientation, access, equity, quality and full responsibility for the health of patients.

Indicators of workload outpatient clinics and quality of outpatient care visits is active patients at home as on the disease and on prevention Coverage of preventive examinations of children and adolescents and more.

The average number of visits to doctors per 1 inhabitant in the general population during the years 1995-2010 in the study area increased by 19.5% , and often people visit doctors lowland areas , at least - the foothills and the smallest - mountain . When compared with similar data for Ukraine, it was found that this area belongs to the areas with the highest level of home visits per 100 populations.

The main reason for physician visits residents of the oblast population is prevention. Since the dynamics of the past 15 years the proportion of visits for diseases decreased by 6.8 % and on prevention increased by 9.5%. The share of visits patients at home during 1995 and 2000 tended to increase, but subsequently decreased by 16.2 %.

Regarding the frequency of attendance of physician’s child population area, it is typical instability enrollments as on diseases and on prevention during the study period.

The average number of visits to physicians of children aged 0-14 years at home for 1995-2010 is 1.0, almost every

child doctor visits home during the year 1 time, and positive is relatively greater number of visits to just about prevention throughout the study period.

Annual preventive examination for years 1995-2010 covered about 99.7 - 99.9 % of children aged 0 - 17 years who are under the supervision of child health clinics. In 2010, the surveys covered in general in Ukraine almost 98.0 % of children. Thus, this quantitative measure commendable. The same high performance necessary to achieve and qualitative characteristics of the outpatient service.

Infant mortality in the region, as well as in Ukraine, and a positive trend: in 2010 the mortality rate of children under 1 year compared to 1995 decreased by 27.7 %, but it remains one of the highest in Ukraine (as of 2010 year, in the Transcarpathian region - 10,1 ‰, in Ukraine - 9,1 ‰). In the study area during 1995-2005 years have seen a reduction in early neonatal and perinatal mortality by 50% and 89.2 %, respectively. Characteristic was the growing share of babies who died during the first week of life from 95.5 to 99.0% in 1995-2005 (in Ukraine - 38.0 - 44.0 %), but in 2010 their share dropped to 92, 2 % due to the increase in the proportion of deaths of infants after the first week of life , such as 1 month of life. Despite the improvements in terms of reduction of almost all types of infant mortality, their level is too high, especially when compared to European countries.

Conclusions. 1. The average number of visits to physicians per capita among the entire population of the region increased by 19.5 %, especially in low-lying area. The most common reason for visits in the general population and children is prevention. Annual preventive examination for years 1995-2010 covered by 99, 7-99, 9 % of children and adolescents, indicating a high numerical performance of the clinic. 2. Despite positive indicators of child, early neonatal and perinatal mortality during the study period, their level exceeds the corresponding figures in the whole of Ukraine, especially in Europe.

Providing people Prophylaxis in sufficient volume and quality depends on many factors, including: the adequacy of the material and technical base of health care, the professionalism and training of doctors, managers competence, psychological readiness of people to take care of their health. So, first of all, you need to influence these factors and take them into account when developing regional programs and measures to improve the quality and accessibility of care. Adopt new indicators ENP 2020, which will need to adapt and use in parallel with national, which is within the National Programmer "Health - 2020: Ukrainian Dimension».

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THE INFLUENCE OF SOCIO-ECONOMIC CRISIS IN UKRAINE ON FOOD SAFETY AND HEALTH OF POPULATION (STATE-OF-THE-ART REVIEW)

N. O. Rynhach, A.O. Keretsman

Institute of Demography and Social Researches by M.V. Ptuhu NANy, Kyiv, Ukraine
SHEI "Uzhhorod national university", Uzhhorod, Ukraine

Summary: Bad feed, food diseases and absence of safe access to adequate to the necessities of valuable feed is the important constituent of load illnesses and death rate in the world in the whole. A socio-economic and political crisis in Ukraine unavoidable carries out his influence on the feed of ordinary Ukrainian and food safety of our country. Simultaneously with the imported products there is a price advance on foods of home production, there are problems for agrarians, the danger of shoddy, off-grade foodstuffs, there was a new high- risk group injured as a result of social conflicts and refugees/force migrants, among risks for the health in that can be and related to the feed. Thus, it is possible to expect in the near time displays of negative influence on the health of population in Ukraine as an increasing of load illnesses related to feed. Thus politics in the sphere of food and feed must be coordinated, that the public health care should have a proper priority with the development and formulation of food politics, including the sectors that don't behave to the health protection.

Keywords: foodstuffs, socio-economic crisis, negative influence, health of population, politics, Ukraine.

An international concord is underline the urgent necessity of complex multi-sectoral strategic politics for the sphere of food and feed for an assistance to the stable and continuous productions of foodstuffs, their safety and providing of high quality and food value of all except people. Bad feed, food diseases and absence of safe access to adequate necessities of valuable feed is the important constituent of load illnesses and death rate in the world on the whole and in the European region of WHO [10,11].The improvement of ration and diet, safety of food and provision of food can not only decrease or prevent suffering of separate people and population on the whole but it

also helps to shorten the losses of society and expense the systems of health protection, provide socio-economic benefits and advantages for countries. Possibilities of healthy ration and diet for people depend not only on an individual choice, but from what foodstuffs are presented and whether they are accessible on a cost. Strategy of assistance to the health through a good feed will nurse outside the sector of guard health and includes the wide range of sectors and industries – from agriculture and processing of food products, production and trade to the transport, retail, maintenance of population and advertisement. [1,6].

Access to the safe and healthy variety of foodstuffs is one of fundamental human rights. The confessed strategy of food politics touches own feed, safety of foods and stable providing of population food [7].

A socio-economic and political crisis in Ukraine carries out unavoidable influence on the feed of ordinary Ukrainian and food safety of our country on the whole. And earlier in our country there was a deficit of food consumption for example vegetables and fruit, fish and fish products, comparatively with certain norms and level of consumption in the countries of ES, but the situation became more unfavorable now[12,4,13].

Today in Ukraine there are not signs of lack of foodstuffs at the internal market, however we can talk about certain limitations. In default of special researchers it is early to give the adequate estimation in situation however it is possible to expound the argued suppositions. If a high-calorie content of daily consumption remains for the main majority of population sufficiently, then quality composition of daily ration is implicitly impoverished [13,5].The reasons of it is the declines of profits of certain part of population and expensive considerable part of commodities especially those that buy after currency. It unavoidably affects on the limitation first of all the imported fruit and vegetables, fish and marine products and of course expensive organic products. For example, from data of Ukrainian Government service of statistics cost-of-living index on food from January 2014 till January 2015 presented 130% and position of fruit – 173% [2,14]. Simultaneously with overpriced of imported products there is price advance on food of home production (problems with credits, rise in prices of power mediums, transport charges etc.).There are problems for agrarians due to reduction of state help, change in volumes and directions of export, purchases at the internal market, uncertainty what will be tomorrow and abandonment from investing and even reduction of agricultural production.

During the last years, from data of the annual surveys of house holders by Government service of statistics the real size of such index of food safety, as part of charges on the feed in total balances in Ukraine at level over 50% approaching to the threshold. It is possible to project that with progress of crisis economic availability of food for few families will be lower, and an index will exceed a critical level over 60%.

Except the change of value ration through limitation of purchasing, a danger is booming to eat shoddy, off-grade (so cheaper) foodstuffs. There is probability of mass poisonings (food poisoning because of shoddy meal and water, chemical as the result of pollution natural environment with substances from the destroyed or not controlled industrial productions, chemical storehouses etc.). Over two and one third of harmful substances get into the human's organism because of shoddy meal and water. A large value is acquired by the timely informing of potential threats for the health and expound work, in fact more clear and objective perception of risk to population

promotes efficiency of the protective measures recommended and carried out by corresponding services of guard [3].

There was a new high-risk group in the country – victims owing to social conflicts and force migrants. Among the risks for the health in this group can be related to the feed. It pertains with low quality of feed (or its limit) and unsatisfactory terms of residence that makes impossible to prepare or to storage the meal, higher probability to the ration of dangerous foodstuffs and water, to the stress is added because of changing residence and fragile usual mode of vital functions . Besides considerable part loses (on different duration terms) work, that affects on the feed negatively and not working members of the family too. The shortage of necessary medical care or postponement of its receiving, absence of necessary medical facilities, force violation of usual treatment, unavoidable will affect unavoidably on the state of the health and rising in price of medical care which is necessary in further.

During the crisis a great part of population exist in the state of sharp and chronic stress. Permanent stress assists the substantial worsen of health and activation of less healthy way of life or risky form of behavior. Sharp or chronic stress becomes the complication and development of new diseases, including the illnesses related to the feed. In our country the usual means of output the tress is the use of alcohol, that causes the increase of number of diseases with the defeat of liver (cirrhosis, hepatitis), pancreas and death rate in the result of it. An inefficient feed also with hypodynamia amend a considerable part in development of cardiovascular and oncologic diseases [8,9].

Violation in water-supply, in the zone of anti-terror operation which is on the East of our country, access restriction of the safe drinking water that has already complicated the terms of human's life and it can become the reason of spreading diseases that is passed by an oral way.

Thus, it is possible to expect the negative influence on the health of population in Ukraine as an increasing of food illnesses related to the feed, increasing of public charges on the health protection, socio-medical care and decreasing of the work productivity etc.

In conclusion politics in the sphere of food and feed must be coordinated that the public health care should have a proper priority with the development and formulation of food politics, including the sectors that do not behave to the health protection.

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IMPORTANCE OF IDENTIFICATION OF DEAD FOR THE RELATIVES ORGANIZATION OF IDENTIFICATION ON A NATIONAL AND INTERNATIONAL LEVEL AND THE ROLE OF INTERPOL

T. Solheim

Institute of Oral Biology, Dental Faculty of the University of Oslo, Oslo, Norway

Summary: Personal identification is identification of dead persons whose identity is not known. This work is considered important in a modern society both from the civil law and because of personal feelings. In mass disasters the Disaster Victim Idenfication (DVI) is taken seriously and Interpol has taken steps to facilitate the international co-operation and identification in such cases.

Keywords: person identification, Interpol, Ukraine.

The main reason to identify dead people is concern for the family and relatives. The implications by the civil law such as life insurance, pension, settling of the estate including heritages and solution of marriages is of course important both for the state and the individual. However, more important for the relatives may be the psychological aspects. Without being sure of what has happened and that the person is dead, relatives never get peace in their minds and tend to continue to search for the missing person. Also a funeral and a grave to visit is an important part of the grieving process. The dead should be left behind, but not forgotten. We say “rest in peace”. It should give the relatives peace in mind and make them able to continue their lives.

In a moderns state it is the responsibility of the state to act as much as possible to find and identify missing persons. The state is of course interested because of civil law aspects. The state should also be responsible for the identifications because of the responsibility for the citizens and their wellbeing. The police as representative of the state must be responsible and act. In most western countries some form of state organized ID- teams have been set up with police as leaders. Identification work is a team work with police, forensic pathologist, inclusive forensic anthropology, forensic

odontologist and DNA experts. Not all countries have acknowledged this in their construction of ID-team. The advantage of an ID-team is that the state is prepared to handle the identification after disasters. This includes plans for who are doing what. The personal know beforehand what they are responsible for. Vaccination may make them ready for going abroad even to exotic countries. Working procedures can be set up. Equipment can be acquired beforehand and stored, ready for immediate action.

Many large disasters today do not only involve the citizens of only one country, but usually many countries. Different standards of identification in different countries have caused a lot of problems and mistrust. In Sweden and Finland they redo the identification of their citizens if they are identified in other countries. Also in the identification of foreign citizen the police need information on the missing person from another country. If information is unsatisfactory it may prevent or at best delay final identification. Sometimes one does not get any ante mortem information at all and identification is impossible.

Interpol is the international police organization dealing mainly with the international exchange of information about criminal activity and criminals. Interpol has also taken an interest in Disaster Victim Identification (DVI). Interested nation have met every year since 1980 and discussed problem of DVI and how to improve the situation. First forms both ante mortem and post mortem were constructed. Such forms should secure that a minimum of information on missing persons and dead persons is registered if the form is filled properly in. Also Interpol has published a guide for the work to be undertaken. It contains a lot of information for police and for the direction of a DVI operation. It is however rather unsatisfactory for the dental identification work. In addition Interpol has set up recommended guide lines for international cooperation in international disasters.

Where is Ukraine in this picture? At the moment I understand that little is done by the Ukrainian state. May be it is not so important for us what you do when Ukrainians are dead. However, a large airplane may crash may have a number of Scandinavian victims. The responsibility for the identification rests with the Ukrainian authorities/police. How far can we trust you? I know Ukraine is member of Interpol and should adhere to the recommendations by Interpol.

MASS SHOOTING: A NEW PHENOMENON IN SLOVAK MEDICOLEGAL WORK EXPERIENCE

J. Šidlo, R. Kuruc, A. Zummerová, J. Šikuta, A. Baloghová

Institute of Forensic Medicine, School of Medicine, Comenius University and Health Care Surveillance Authority, Bratislava, Slovakia

Summary: Crime and criminality have a long history in various cultures of the world. In Slovakia, particularly organized criminality began to fully develop in the 90-ties of the 20th century. In most cases with lethal end, an attack was led against one or two persons. Only one "massacre", in which 10 members of one "underworld clan“ were killed, was recorded. Despite the existence of organized crime in Slovakia, no case was monitored, in which one individual would use a firearm against several people, as often happens in the U.S. or in Western Europe.

Keywords: mass shooting.

The aim of this study is to demonstrate a "unique" case in the history of Slovak criminality and to analyze the causes and consequences of shooting that occurred in Bratislava on the 30th of August 2010 in the morning, when a 48-year-old man in a period of 16 minutes attacked and killed, using a firearm, 7 victims, injured 16 people, and then used the weapon against himself. The study focuses on the victims that were killed and on the perpetrator.

Examinations of the dead body of the offender and the victims were carried out at the scene of death and subsequent autopsies with complete macroscopic morphological evaluation and additional laboratory examinations (histological, toxicological, haematological, X-ray examination, and the test proving the presence of gunshot powder) were done at the Institute of Forensic Medicine of Health Care Surveillance Authority in Bratislava. One section of ballistic tracks was evaluated – the firearms and cartridges of the offender at the crime scene.

At the scene of death 8 dead bodies were found: 1 perpetrator on the street below the balcony of adjacent block of flats and 7 victims. Five victims in 1-bedroom apartment neighbouring with the apartment of the perpetrator (2 victims in the bathroom and 3 in the living room); 1 victim on the street in front of the block of flats at the residence of the offender and 1 "random" victim in an

apartment in the block of flats at the opposite side of the street. Similar autopsy findings were found by all the victims. Predominantly penetrating wounds of the head and chest were detected. The cause of death was hemorrhagic shock in five cases and central death in two cases.

Autopsy findings of the perpetrator: penetration wound of the thorax caused by police, gunshot wound of the head caused by the perpetrator himself. Concentration of acetone: in the blood 143.13 mg.kg-1 (0.14 ‰), in the urine 850.42 mg.kg-1 (0.85 ‰). The result of the test proving the presence of gunshot powder: smears from the thorax negative, smears of the head positive.

The concentration of acetone detected in blood sample of the offender 143.13 mg.kg-1 is according to the literature data above the physiological concentration of acetone in blood. Severe toxic effects after the use of acetone occur when the concentration of acetone in blood is at least 200 - 300 mg.l-1, as described in the literature. The behaviour of people after taking solvency (e.g. acetone) may be in some cases unpredictable and openly aggressive towards the surroundings. Abstinence symptoms are manifested as mental irritability, which may culminate in hostile and aggressive behaviour. Besides, the necropsy and histological examination of the tissues of the offender did not show any signs of starvation or diabetes.

During the examination at the crime scene, a long firearm - self-loading rifle (machine rifle) no. CZ 858 Tactical, cal. 7.62 x39 mm, homemade adapted to fire a dose, was found near the body of the offender. This type of rifle is designated for sporty target shooting. In a cloth bag, which was hanging over the offender's shoulder, 10 big and 3 small full containers for self-loading rifle were detected a total number of 330 loads. Behind the trouser belt of the perpetrator, two short firearms - pistols CZ (cal. 9x19 mm Luger) with 4 full containers were found - altogether 87 loads. At the crime scene, 5 additional empty big containers for self-loading rifle were traced.

Altogether, 140 cartridges fired from self-loading rifle CZ 858 Tactical, were found, 25 of which were traced in the apartment of the victims and 115 on the street. This testifies the fact that the perpetrator of the attack used only one weapon a self-loading rifle CZ 858 Tactical. Out of 25 projectiles that were found in the apartment of 5 victims, 12 projectiles directly hit the victims.

Police fired at the offender 15 times, with one bullet hitting the offender in the chest.

Former policeman shot away the family from the neighbouring apartment in Bratislava and in front of the block of flats he shot another member of this family. Then he wounded 16 people walking through the street and finally he used the weapon against himself. This incident has changed the lives not only of the inhabitants of Bratislava but has also taken the attention of media abroad, since a similar tragedy had not occurred in the history of the Slovak republic before.

The family that was shot by the perpetrator was objectionable for all of its neighbours for a long time. Several complaints and petitions had been submitted against the family. Whether the mass murder of the family members had been planned in advance or was a result of "*furor brevis*" is the subject of speculations. The perpetrator was a sporty shooter and this could have determined him to his own „easy" way of solving the problem. He had 6 weapons in legal possession and possessed a firearm certificate.

For a group of people this man has become a "madman" from Devínska Nová Ves (residential area of Bratislava), who murdered his neighbours out of hatred towards Roma minority; for another group of people he has become a "hero", who has resolved a long lasting problem; but there are also those who regard him as a "victim" of long-lasting apathy of the competent authorities.

COMPARATIVE CHARACTERISTICS REMINERALIZATION THERAPY ON EXAMPLE OF PREPARATIONS REMIN PRO AND BIFLUORID 12 COMPANY VOCO

A. Vasko

Uzhgorod National University, Department of Dentistry Age of Child, Uzhgorod, Ukraine

Summary: Definition most expedient methods of treatment initial caries of acute and chronic course in terms biological feasibility and minimum invasiveness. Choosing the optimal, rational and biologically expedient method of treatment initial caries of acute and chronic course in persons residing in endemic zone with deficit fluorine and iodine in water and food. Efficiency the remineralization therapy conducted material Bifluorid 12 (VOCO) in outpatient settings. The efficacy Reminpro (VOCO), that was used in the home.

.**Keywords:** caries diagnostic methods, children's dentistry, caries, remineralization therapy, remineralization therapy effectiveness

Introduction. City Uzhgorod is endemic zone with a significant deficit fluorine, iodine, calcium and other chemical elements, micro and macro elements [1,2,4,6]. This, in turn, contributes to the development of carious lesions [1,3,5,7]. According to various sources caries prevalence ranged from 95 to 98%. Commonly known fact that early diagnosis and early treatment significantly increases the chances of effective treatment of any disease. And diagnosing caries in the stage of spots - there is a question of choosing the most optimal, efficient and affordable method of treatment [5,6,9]. As one method of choice for treatment of early forms of caries is the remineralization therapy. The choice is due to several factors. This affordable treatment. It does not need trimming tooth, which significantly reduces psycho-emotional stress on the patient. The possibility of treatment at home, which is convenient for the patient. Sustainable, long-term effect after treatment [8,9,10].

Objective: Determine the optimal method remineralization therapy for young people in terms fluorine and iodine deficiency.

Materials and methods: It was held dental examination secondary school students №20 of Uzhgorod. Overall examined 494

children aged from 7 to 17 years (242 boys and 252 girls).

Results and discussion. In carrying out the dental examination of students 494 children 7-17ty years of age (242 boys and 252 girls) (Table. 1).

Among the surveyed persons 7-11 years of caries intensity is 12,2 ± 1,2. For 12-17ty annual survey, the figure is 11,2 ± 1,2.

Gender differences were observed among indicators. Data figures indicate a high degree of intensity of caries in the surveyed group. (Table. 2).

Table 1

Distribution surveyed by age and sex

Total surveyed (n=494)							
7-11 years old (n=248)				**12-17ty years of age (n = 246)**			
Boys		**Girls**		**Boys**		**Girls**	
abs.	**%**	**abs.**	**%**	**abs.**	**%**	**abs.**	**%**
122	49.1	126	50.9	120	48.7	126	51.3

Table 2

The intensity of caries among the examined

Age	**Boys (n=242)**		**Girls (n=252)**		**All (n=494)**	
	number surveyed	**items**	**number surveyed**	**items**	**number surveyed**	**items**
7-12 years, alternating occlusion	122	12,3±1,2	126	12,1±1,2	248	12,2±1,2
12-17 years, permanent occlusion	120	11,4±1,2	126	11,0±1,2	246	11,2±1,2

Among the surveyed individuals were selected only those with cavities placed on the vestibular surface of the front group of teeth. In the diagnosis of lesions of us sposterihalys areas of demineralization on tooth surfaces. Probing, painless, shorohuvate probe delayed jams. Thermo diagnosis is negative or slightly positive. The method of drying enamel surface gave a clear picture of

where the abnormal tissue lost luster after drying, become more visible on the background intact enamel. Painting caries using marker positive. Fluorescent diagnostics enables to verify the diagnosis,

differential diagnosis and conduct initial caries carious lesions with no teeth.

Among all surveyed our 214 students were selected which determined the initial acute and chronic caries and acute and chronic superficial caries.

Superficial caries was determined in 112 students (55 boys and 57 girls) (Table. 3). Yes, both at the surface caries lesions are observed defect and tissue, the treatment of these patients was a mechanical necrosectomy with further sealing material cavity estelitesigmaquick.

Table 3

Distribution of surveyed persons depending on the flow of superficial caries and sex

Total surveyed (n=112)				
	boys (n=55)		Girls (n=57)	
	abs.	%	abs.	%
Acute surface caries	46	84	48	84
Chronic superficial caries	9	16	9	16

Initial caries was diagnosed in 102 subjects (50 boys and 52 girls) (Table. 4)

Table 4

Distribution of surveyed persons depending on percolation initial caries and sex of

Total surveyed (n=102)				
	Boys (n=50)		Girls (n=52)	
	abs.	%	abs.	%
Acute initial caries	39	78	41	78
Chronic initial caries	11	22	11	22

This group was divided into two groups of 51 patients (25 boys and 26 girls) in each of them. Patients groups №1 were treated initial caries by covering affected areas of drug Bifluorid 12 (VOCO) Germany.

Group №2 was scheduled treatment with pasta Reminpro (VOCO) Germany.

Results and their efficiency was determined after 3 months. (Table. 5, 6)

Table 5

Results of treatment applications Bifluorid 12 (VOCO) Germany

	Boys (n=25)		Girls (n=26)		Всього (n=51)	
	abs.	%	abs.	%	abs.	%
Completely restored tooth surface	24	96	25	96	49	96
Minor areas remineralization	1	4	1	4	2	4
Lack of effect of treatment	0	0	0	0	0	0

Table 6

Results of treatment using Reminpro applications (VOCO), Germany

	Boys (n=25)		Girls (n=26)		All (n=51)	
	abs.	%	abs.	%	abs.	%
Completely restored tooth surface	15	60	17	65	32	62
Minor areas remineralization	7	28	5	19	12	24
Lack of effect of treatment	4	16	3	12	7	14

Conclusion. The results of the studies found that the drug Bifluorid 12 (VOCO) Germany, used a group №1, was effective in 90% of cases, relatively effective in 4% .. Instead Reminpro (VOCO) Germany, which used the patients from group №2 Only to be effective in 62% of cases, relatively effective in 24% and inefficient - in 14% of cases. These results can be explained by the use of drugs methodology for remineralization therapy. So drug Bifluorid 12 applies only to outpatient physician taking and drug Reminpro used medical patient unattended at home, which greatly affects the outcome of treatment. In picture 1, 2 and 3 shows the patient K., 15 years. The diagnosis - chronic superficial caries tooth 1.3, 1.2, 1.1, 2.1, 2.2, 2.3 teeth. Photo 1 - at the initial examination. Photo 2 - a month of treatment, photo 3 - 3 months after covering drug Bifluorid 12.

Figure 1. Patient K, 15 years old

Figure 2. Patient K, 15 years old

Figure 3. Patient K, 15 years old

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PRINCIPLES OF EXAMINATION AND TREATMENT PLAN IN PATIENTS WITH PERIODONTAL DISEASES SECONDARY TO METABOLIC SYNDROME

I. Mazur, Z. Hostieva, I. Trubka

Shupyk National Medical Academy of Postgraduate Education, Department of Pediatric Dentistry, Kyiv, Ukraine

Summary: This article reviews the peculiarities of periodontal disease in patients with metabolic syndrome. There are the aspects of diagnosis and verification of the proposed scheme of diagnosis of metabolic syndrome in patients with generalized periodontal disease [7,11]. The basic principles of examination structural-functional state of bone tissue in these patients. Established that generalized periodontal disease secondary to the metabolic syndrome occurring more aggressive and harder exposed to stabilization. Remission at uncontrolled hyperglycemic states is significantly reduced. The proposed scheme of treatment of generalized periodontitis in patients with metabolic syndrome helps achieve clinical stabilization [4,6,10,12].

Keywords: periodontal disease, metabolic syndrome, roentgen-morphometric indexes, bone densitometry, biochemical markers of bone remodelling.

Introduction. The problem of periodontal diseases is one of the leading in modern dentistry, which is associated with widespread population of different age groups, the lack of clear diagnostic methods, ineffective treatment. Generalized periodontal disease manifested as steadily progressive inflammatory and destructive process that with age leads to the complete destruction of the interdental bone membranes and premature loss of teeth [4,5,8]. The research demonstrated the close relationship of periodontal tissue diseases and structural and functional state of the bone system. Metabolic syndrome (MS) is one of the most complex healthcare and social problems today, there is the complex of pathological conditions, associated with each other, insulin resistance, obesity, dyslipoproteinemia, arterial hypertension and other pathological disorders[2,3,9]. Often the first manifestation is type II diabetes mellitus, arterial hypertension, coronary heart disease. MS may affect structural and functional

status of the bone tissue, and thus provide diagnostic features, clinical course and treatment of generalized periodontitis [4,6,10].

Objective. Improving the efficacy of the treatment of generalized periodontitis by studying the characteristics of his diagnosis, clinical course secondary to the metabolic syndrome.

Materials and methods. Depending on the conducted clinical and laboratory studies, patients were assigned into two groups. In the main study group there were 58 patients (33 men and 25 women) with generalized periodontal disease and the metabolic syndrome. The control group consisted of 62 patients (33 men and 29 women) with generalized periodontal disease, but without the metabolic syndrome. The average age of the subjects was 45.8 years.

The state of periodontal tissues was evaluated according to generally accepted scheme, using subjective methods of investigation (complaints, medical history), dental and periodontal examination with completing a periodontal card. History of comorbidities and related illnesses were filled in the questionnaire - the questionnaire of general health and dental status. The diagnosis is established according to the classification of N.F. Danilevsky (1998).

All subjects were held:

 clinical (medical history, collection statement, dental examination, determination paraclinical indexes - hygienic index of Fedorov-Volodkina has been determined, PMA indexes, periodontal index).

 radiological (orthopantomography, dental sighting shots) and radioviziohraphic; definition of roentgen-morphometric indexes (on patient's orthopantomogram were measured the height of basal ridge (HBR), the height of the body of the mandible (VTNCH), the height of the mandible (VNCH) and was determined the mandibular cortical index (MKI), mental index (MI), the index of alveolar bone resorption (IRAO), panoramic mandibular index, panoramic mandibular index, antehonialnyy index (AI) and honialnyy index (GI) [4,5].

 laboratory: biochemical (determination of blood glucose, if necessary, load analysis, definition glycosylated haemoglobin, lipidohramma: determination of cholesterol, high density lipoprotein, low density lipoprotein and very low density atherogenic index); determining markers of bone remodelling (parathyroid hormone, osteocalcin, calcium).

 functional studies (determination of blood pressure, waist severity of roundness) functional studies of bone - conducting ultrasonic Achiles + or dual energy X-ray absorptiometry.

The presence of MS verified under the joint abdominal obesity (OT> 82 cm for women and 102 cm for men) with two or more components of the metabolic syndrome (according to the criteria of IDF, 2009): triglycerides ≥ 1.7 mmol / L, HDL cholesterol <1.29 mg / dL, blood pressure ≥ 130/85 mmHg, blood glucose ≥ 5,6 mmol / l. Bone mineral density of the whole body, lumbar spine and femur was determined by X-ray densitometry on the device Prodigy (GE Medisal systems, USA). Statistical analysis was performed using the Statistical Package 6.0 (Statsoft).

In order to sanitation mouth, patients in both groups were conducted initial periodontal treatment, which included professional hygiene, ultrasonic scaling - undergingival removal of dental plaque and polishing the teeth roots with Gracie instruments, curettage and medication periodontal pockets. Patients in both groups of the study structure-functional disorders of bone metabolism prescribed drugs for correction of metabolic osteopathy - antyrezorbenty Bonviva 3 months 1 tablet per

month, Citra-Calcemin, 1 tablet b.i.d during 6 months. Efficacy and results were controlled in 1 month, 6 months and 1 year.

Study results and discussion. In the group of patients with metabolic syndrome lipid and carbohydrate metabolism are above the upper limit of normal, which primarily points to the systemic violation of metabolism. As a result, the survey found that indicators of structural-functional state of bone tissue in the studied group and the control group had differences. The level of parathyroid hormone in group I was 52.13 ± 4.18, while the control group was 46.25 ± 4.47. Indicators of biochemical blood tests were in group I: osteocalcin 15.71 ± 1.46; calcium 2.38 ± 0.02, for group II osteocalcin level was 25.7 ± 6.79, calcium 2.31 ± 0.03. These figures indicate that in both groups resorption processes prevail, but in the main group they are more intense. As for the study of structural and functional state of bone densitometry ultrasound results were taken into account for both. In I group was established the strength index (Stiffness) 99.18 ± 3.87, while the second group of indicators made 93.6 ± 2.59. Overall, indicators of density in the main group studied was higher than + 1SD. Bone tissue of patients assessed as osteosclerotic.

In 3 months after the initial periodontal treatment was observed clinical stabilization of generalized periodontitis: gum compaction, lack of congestion of gum edge, increased gingival recession against the background reduce the depth of periodontal pockets, no allocation from them ,significantly decreased mobility of the teeth. There were noted the decrease of paraclinical indixes - PMA, Ramford index and periodontal index in the study.

The comparative analysis of X-rays demonstrated some differences in structural-functional state of the bone tissue. In the study group on radiographs were observed bony pockets and crater destruction of alveolar ridge. Bone tissue of patients assessed as osteosclerotic. X-rays of these patients demonstrated dribnopetlystyy picture bones, thickened membrane bone of spongy bone. While the comparison group was observed on radiographs bone pockets crater destruction of the alveolar ridge, on the tops of the interdental bone membranes phenomenon of osteoporosis, "transparent" picture cancellous bone, due to osteodestructive and inflammatory processes.

Conclusions. In the group of patients with metabolic syndrome lipid and carbohydrate metabolism are above the upper limit of normal, which primarily points to the systemic violation of metabolism. An examination of structural and functional state of bone was determined the reduction of the formation and increase bone resorption process. In conducting ultrasound densitometry was found that density during the ultrasonic wave is within normal limits, or is above ranges. In conducting clinical dental examination was found that generalized periodontal disease secondary to the metabolic syndrome has more aggressive disease course and harder exposed to stabilization. Conducting initial periodontal treatment after 3 months allowed to achieve clinical stabilization of generalized periodontitis, remission in uncontrolled hyperglycemic states decreased significantly, indicating the efficacy of treatment of generalized periodontitis in patients secondary to the metabolic syndrome.

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PREVENTION OF DENTAL CARIES: TRENDS AND TREATMENT

N. Savichuk, I. Trubka, L. Kornienko, Z. Hostieva, L. Ermacova

Shupyk National Medical Academy of Postgraduate Education, Kyiv, Ukraine

Summary: Creation of modern programs for dental disease prevention, based on the risk theory, is an integral part of the minimally invasive dental caries treatment concept, implementation of which in the daily practice of a dentist will not only improve dental health, but it can also increase benefits of prevention as a dental service.

Keywords: caries, prevention program, risk factors, minimally invasive therapy, dental health

Dental caries is the most common dental disease in adolescents. Prevalence rate of caries in 12 year pediatric patients in Ukraine varies 72.7 to 91.4% and 81.3 to 94,3% in patients aged 15, respectively. However, the amount of affected teeth based on Filling Caries (FC) + Filling Caries and Removal (FCR) parameters in 12 year pediatric patients varies 2.23 ± 0.21 to 3.71 ± 0.37, and during three years it was demonstrated to increase up to 3.91 ± 0.39 to 6.18 ± 1.01 in patients aged 15, respectively [8].

Modern approaches to creating preventive programs, including programs for dental caries prevention, are based on risk theory. Risk management: risk management is a procedure for adoption and implementation of managerial decisions aimed to decrease probability of occurrence of an adverse outcome and minimize possible losses due to the procedure implementation [11]. Selection of methods and risk management tools is considered the key phase of the risk management. The primary risk management tool in the medical practice is prevention or diversification (method of reducing) of risks. Risk analysis of development and progression of dental diseases that employs evidence-based

medicine sources allows to highlight groups of the most significant factors.

Environmental risk factors characterize the human living environment and include geochemical and agroclimatic region features, chemical composition of water, soil, air, and food that impacts the caries morbidity level in people [1,4,5,9,12,13].

Social risk factors are stipulated by economic development of a country and welfare level of an individual.

General somatic risk factors increase its influence on development of a dental pathology year after year, and first of all, on caries, since the prevalence rate of chronic non-infectious diseases in pediatric patients in Ukraine increases on average by 5.4% [14].

Behavioral risk factors (diet culture, such as frequent snacks and consumption of easily digested carbohydrates), absence or low level of culture of individual hygienic skills, appear due to insufficient adequate control of habits and behavior in a family.

Dental risk factors include the following: saliva and oral liquid properties; amount of cariogenic microorganisms in the oral cavity and in the dental biofilm; amount of enzymes, macro- and microelements in the oral liquid; enamel resistance and maturity; features of odontoglyphics.

Summarizing the above, it should be noted that the risk factor management and removal or reducing their impact is the primary task of a dentist. While discussing possibilities of the dentist to impact the managed risk factors, specifically, behavioral and general somatic ones, it should be emphasized to perform the curation in pediatric patients since the age of teething.

The first Friendly Dental Visit conducted at the first birthday (12 months) helps resolve many issues, and is the basis to implement prevention methods on a personal level. Close communication with the pediatric patient and his/her parents allows to highlight risk factors which further may lead to development of dental diseases and assign the regimen of subsequent visits, taking into account the detected risk factors for control and further recommendations.

During the Friendly Visit mothers are trained to care for oral cavity of their children, to select and use items and products for oral cavity hygiene in adolescents. Mothers also learn how to train their children individual oral hygiene and monitor the status of oral cavity hygiene. In addition, such visits help develop confidence, collaboration and understanding by parents the necessity to follow all recommendations.

Therefore, during the new phase of development of dental science and practice, the need to implement a system of individual prevention of dental diseases as part of dental and preventive service and dynamic observation system, is obvious.

The algorithm of preventive dental service should include methods of objective assessment of risk factor status using modern test systems to determine saliva parameters, indicate dental plaque, detect Streptococcus mutans in saliva as well as utilizing software for composite prognosis and evaluation of dental caries development, such as Risk Profile (Axellson, 2000) and Cariogramma (Bratthall, 1997; L.P. Kiselnikova, E.N. Tabolova, M.V. Miroshkina, E.V. Krikova, A.V. Schukin, 2008) [3, 7, 15,16].

First of all these tests are good indicators for dentists and excellent tools to motivate patients. Patients can see their findings and, generally, are willing to accept a treatment plan, and that is fine motivation for further collaboration.

Subsequently, the objective assessment of risk factors for dental caries development should be the keystone of preventive measures protocol, i.e., to create modern standards for dental caries treatment.

In Ukraine, possibilities of dental service that works extensively, are exhausted; brain drain is observed from the primary dental branch that deals with prevention, specifically, in pediatric dentistry; and today we need a brand new approach towards prevention as well as change the paradigm of minimum intervention concept [17].

This method represents the dynamic observation system and is efficient only if the

integration of all components during a patient treatment are met.

The suggested approach is patient-oriented and includes 4 primary treatment components below:

Step 1. Detection: stratification of risks of development and progression of dental diseases:

- diagnostic tests to immediately check level of cariogenic bacteria, pH, and buffer capacity of saliva and its rheological properties;

- detection of carious cavities (X-ray, DIAGNOdent laser fluorescence spectroscopy).

Step 2. Removal or prevention.

Having established the risks, it is possible to provide recommendations and take optimal preventive measures. They may include the standard measures depending on diagnosis: oral cavity hygiene, diet correction, maintenance therapy, patient motivation. In case of high risks, decontamination, remineralization, and fissure sealing should be additionally performed.

Step 3. Recovery. This step is performed using non-invasive or invasive methods, as appropriate. Non-invasive recovery methods include remineralizing products (Tooth Mouss, MI Paste Plus, F-gels, varnishes), infiltration methods (Icon DMG), non-invasive fissure sealing, prescription of drug products that provide comfort (Dry Mouth Gel).

Invasive recovery methods are the following: sparing preparation with precision drills, erbium laser, ultrasound, air-abrasive method. Minimally invasive preparation methods are enough diversified and should be selected based on equipment available at the dentist's office. The main requirement is to prepare with minimum damage for adjoining normal tissues and perform definitive restorations using glass ionomer cement (GIC), invasive fissure sealing.

Step 4. Dynamic observation consists in development of the dynamic observation system schedule, specifically, repeated examinations, that will allow to efficiently perform preventive treatment. At this stage general and dental health is evaluated, medical history is updated, current status of oral cavity is assessed (using diagnostic tests), efficacy of preventive measures is evaluated, patient is informed about comparative findings, and minimally invasive restorations are corrected. During the examination, patient status is re-assessed taking into account quality indicators of prevention and treatment, and the treatment regimen is corrected according to the current status.

The benefits of the minimally invasive caries treatment are obvious. It offers minimum weakening of tooth structure and minimum time consumption for the treatment, longer lifetime of restorations, preventive effect due to elimination of microorganism retention into fissures as well as high aesthetic qualities in adequate control of risk factors. The disadvantages of this method are mainly human-related: the dentist should be highly qualified and have professional equipment, this method is complex for perception and contradicts to the general Black's concept.

It should be mentioned that minimally invasive method of caries treatment is used selectively in Ukraine only as part of recovery and, significantly less frequently, fissure sealing. Only those methods, that can be immediately implemented and paid, have been used. This approach is shortsighted and is completely inefficient for future conditions when caries prevention in Ukraine (like in other countries with low caries rate) will be the main source of income of the dentist and the subject for funding.

Creation of efficient approaches to municipal prevention, such as regional programs for prevention of dental diseases, based on risk diversification methods, is the actual issue for the dental service in Ukraine. To be able to create such programs it is necessary to perform a systemic analysis of risk factors of development and progression of dental diseases, range their significance (i.e., to highlight factors, markers and indicators), create prognostic models, quality indicator system, and synthesize an efficacy assessment procedure. Significant exploratory works in this regard had been conducted by academician V.K. Leontiev, corresponding member of the Academy of Medical Sciences K.N. Kosenko, professors P.A. Leus, A.V. Udovitsky, L.A. Khomenko, N.I. Smolyar, A.V. Denga, and others [2,3,4,5,6,10]. The issue of creation of new, highly efficient, economically reasonable and realistic for the large-scale implementation of preventive programs for the most common dental diseases, still remains extremely actual at the current stage and requires focused attention of the dental science and practice. The actual issue for the dental service in Ukraine is to create efficient approaches to municipal prevention, such as regional programs for prevention of dental diseases, based on risk diversification methods.

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CLINICAL AND INSTRUMENTAL ANALYSIS OF PROSTHETIC TREATMENT SUPPORTED BY ZIRCON PRIOR DENTAL IMPLANTS

A.M. Potapchuk, V.M. Kryvanych, V.V. Rusyn, M.Y Goncharuk-Khomyn

Department of Postgraduate Dental Education, Uzhgorod, Ukraine

Summary: The complex evaluation of the effectiveness of prosthetic treatment of dentition defects with the use of fixed structures supported by Zircon prior dental implants was based on results of clinical and instrumental diagnostics methods. The evaluation of success rate also was provided in the remote period.

Keywords: dental implantation, late resorption, Zircon prior

Background. Despite the fact that the number of dental implantation procedures in dental practice is increasing every year, the loss of implants associated with development of periimplantitis and disintegration of implants, unfortunately, is a common complication. Studies that involve research of the factors that cause negative dental implantation results are relevant and ongoing nowadays. Number of researches directed on the investigation of the biocompatibility level of the materials of which implants are made, features and lapses of different implantation techniques, and the influence of bacterial («plague theory») and biomechanical overload factors ("loading theory") on remote and immediate outcomes [4,6].

Comprehensive assessment of prosthetic treatment efficiency of patients with dentition defects by fixed structures supported with dental implants should be directed on the evaluation of the clinical and periodontal impact factors on the peri-implant tissue condition at the immediate and remote post-treatment periods [8,10]. Also, such assessment should be done with regard to subjective patient satisfaction by conducted implant treatment, as one of the indicators of the overall success of any iatrogenic intervention [1,2]. Only the verification of such relationships will form the objective criteria for adequate selecting of treatment algorithm and adapted implantation protocol that justifies the use of dental implants with the relevant structural characteristics [1-3].

Such differentiated approach is aimed to improve the efficiency of direct and remote results of prosthetic treatment supported by dental implants and provide complex argumentation of convincingly confirmed success prognosis of iatrogenic intervention.

Objective: to conduct complex clinical and instrumental analysis of implantation success results with the use of "Zircon Prior" implant system and evaluate the effect of clinical and periodontal factors on late bone resorption late at periimplant region; to provide argumentation for compliance of clinical intervention effectiveness indicators and success criteria of implant treatment according to the results of questionnaire survey of patients from researched groups.

Materials and methods. A comprehensive examination and treatment of 83 patients aged from 25 to 75 years with defects of dentition (I-III classes by Kennedy) with the fixture of 250 implants were provided to evaluate the algorithm of dental implantation. Among researched group 37 males (44.6%) and 46 females (55.4%) were presented, while 115 implants were installed during males treatments and 135 during treatment of female group (Fig. 1-2).

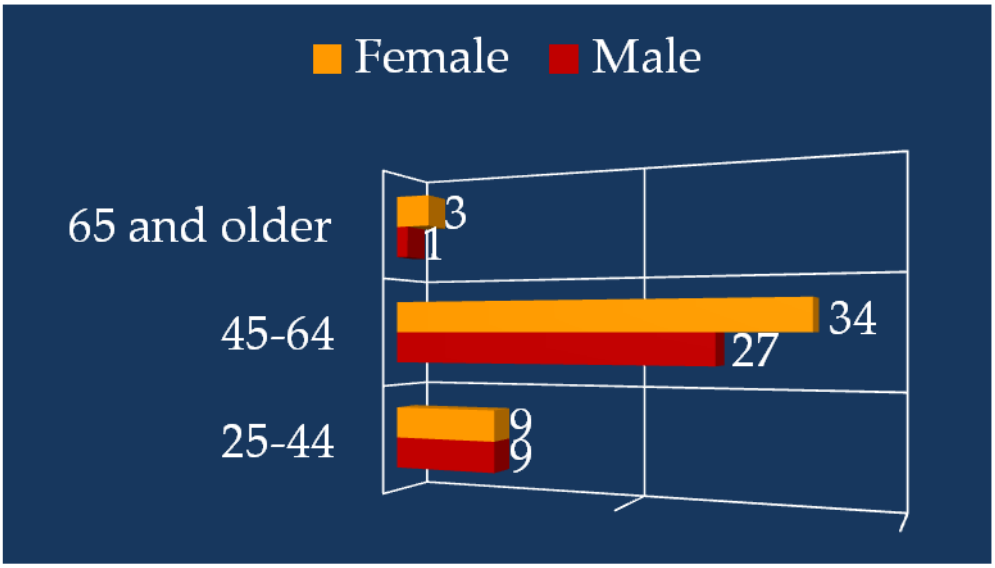

Figure 1. Distribution of patients by age and gender

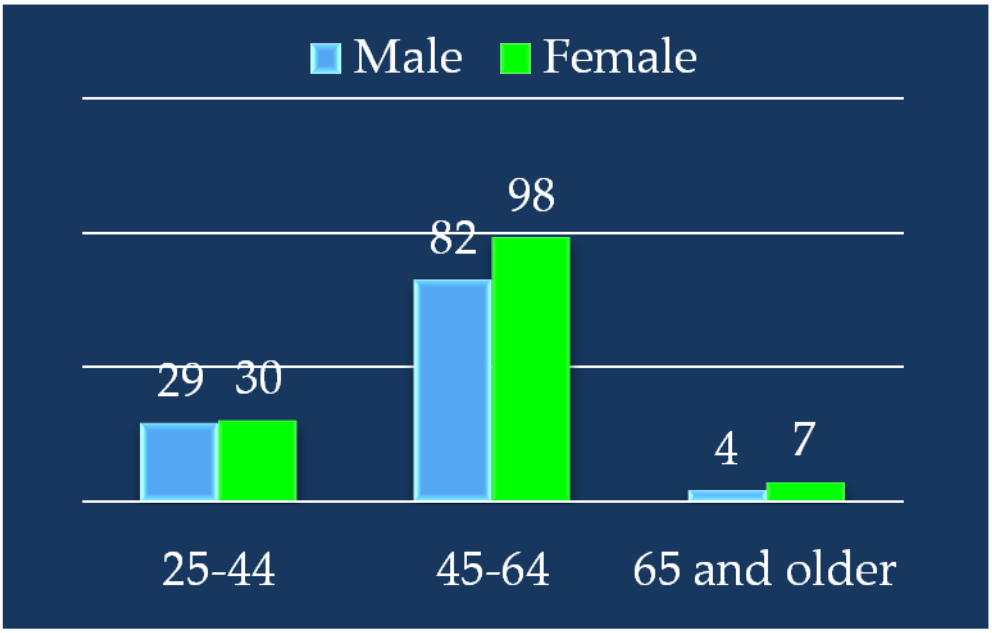

Figure 2. Distribution of implants by gender and age

Identical protocols of selection, preoperative examination, surgical phase of implantation and postoperative treatment were used for all patients. All patients were divided into 2 groups - patients who underwent implantation with a standard protocol (group I) and patients who underwent immediat-implantation (group II) (Fig. 3).

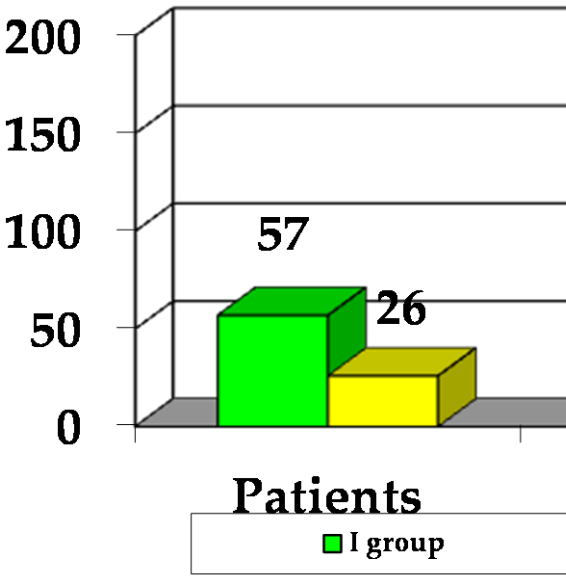

Figure 3. Distribution of researched groups

X-ray computed tomography were done for a more detailed examination of quantitative and qualitative characteristics of the bone of the upper and lower jaws held by scanner on Planmeca ProMax 3D Max (Finland) with 0.3 mm thickness of slice.

Further analysis of 3D image was carried in a special program Planmeca Romexis Viewer. The clinical success of dental implants was evaluated due to the dynamics of bone resorption, conditions of periimplant tissue, results of functional studies and evaluation of the primary stability of the implant.

Changes of soft tissues and levels of the medial and distal papillae were evaluated by taking photos with a digital camera Nikon P 90 before extraction, after implantation and fixation of temporary crowns, at 3 months, 6 months after fixation of permanent crowns, and 12 months after implantation (due to Kan J.Y.S., 2004) [3,4].

Measurement of marginal bone level loss at medial and distal sides of the implant were evaluated by the series of periapical X-ray images. Apical edge of orthopedic implant platform was chosen as starting line.

Marginal bone level measurement was carried out by X-ray due to method of Rungcharassaeng K. et al., 2002 [1,2]. The dynamics of bone resorption at the cervical area of implant was determined using software package “Trophy" by “Sirona”. The measurements were performed after 3, 6 and 12 months after implantation. Radiography was performed by using parallel technology positioner Rinn XCP (XCP post bite blocks54-0862), Dentsply for an objective comparison of the results of measurements in different terms. Measurements were performed in the medial and distal directions from cervix of implant.

Depth test was conducted at 4 sites (buccal, lingual, medial, distal) with a pressure sensitive mechanical plastic probe for clinical quantitative and qualitative assessment of the severity of peri-implant changes. The distance from the gingival margin to the bottom of sulcus was measured to the nearest mm.

Overall satisfaction criteria of implant treatment was provided to determine the verification success rate of implantation. For this purpose all participants were offered to fill in a questionnaire with questions (criterions): comfort, layout, ability to chew food, the ability to speak, the ability to clean the implants, the overall satisfaction. Each factor can be assessed by the four-point scale: 1) fine; 2) good; 3) satisfactorily; 4) unsatisfactory.

Results and discussion. The structure of tooth loss causes of patients from researched groups had next distribution: complicated caries - 68%, periodontitis - 20%, trauma - 12%.
An analysis of bone quality and quantity based on the classification of types of bone tissue proposed by Misch (1999) in patients of both studied groups revealed that the most frequently met is III type of bone, slightly less prevalent are II and IV bone types, and the I type is the unexpanded and mostly can be found at mandible. III type of bone often were found at the upper jaw, the II type in the frontal areas and type IV in lateral regions. Most lateral sides of the maxilla had IV type of bone. In lateral areas of the mandible IV type of bone was rarely encountered, and found just in cases where place was not healed after root extraction.

In patients with II type of bone implants Zircon Prior Flat were used, and Zircon Prior Ferrox and Zircon Prior Fortis were used in patients with III-IV types of bone. Zircon Prior implants of different length (8 mm, 10 mm, 12 mm and 14 mm) were used during treatment. In most clinical cases were used implants of 10 and 12 mm. 12 implants with 8 mm length were fixture in the lateral regions of mandible, because installation region was limited by depth of mandibular canal and the internal oblique line. The same 5 implants were installed on the upper jaw. Diameter of implants were 3.75 mm, 4.0 mm, 4.5 mm and 5.0 mm. Implants with a diameter of 3.75 mm and 4.0

mm were often installed in the frontal regions of the upper and lower jaws, whereas 5 mm implants - in the lateral sides.

Not only were the shape of the crown, but harmony of gingival contour taken into the account during assessing the aesthetic result of subsequent prosthetic implant treatment. Recession usually always accompanied with implant restoration. In our studies changes of gums before treatment, and 3 - 6 - 12 months after treatment were respectively 0,36 ± 0,04 mm, 0,40 ± 0,05 mm, 0,48 ± 0,05 mm 0, 55 ± 0,05 mm. Changes were statistically significant (p <0.001) and amounted to 0,55 ± 0,05 mm in one year. The loss of soft tissue by 1 mm for 1 year observed Bengazi et al [6,7]. Studies of Small and Tarriow [5, 8] found that recession after implantation was 0.85, medial papilla loss at 12 months was 0.47 mm, and distal - 0.78 mm.

Almost all successful implantation statistics based on radiographic measurements while the implant itself is used as an internal standard. An analysis of radiograph images at 3 months after surgery and implantation at the mandible in patients of both researched groups found not high bone resorption level (0,18 ± 0,04 and 0,35 ± 0,04 mm, P <0, 01). On the upper jaw these measurements were almost 2 times higher. In II group, where was held immediat-implantation protocol, atrophy of the marginal mandibular bone after one year from the medial side of the implant was 0,22 ± 0,04 mm, and from distal - 0,26 ± 0.04 mm. These data are consistent with Anderson et. al., who observed such effect of marginal bone changes at early loading in 88% of cases.

Long-term prognosis of implantation depends on the integration of implants with bone and soft tissues. Although the average bone resorption of 0.2 mm in the area of integrated implant considered to be physiological, however late resorption does not necessarily occur in the area of each implant. Late bone resorption is the gradual resorption in the area of the implantation after integration that may eventually lead to the disintegration of the implant. The most likely etiological factors are periimplantitis and occlusal overload. However, literature data can not provide an unambiguous conclusion about the clinical significance of factors affecting late resorption. This determined the feasibility of a meta-study called to evaluate significance of clinical and periodontal impacts on bone resorption in periimplant area. Results of conducted meta-analysis are summarized in Table 1.

Table 1

Effect of clinical and periodontal impacts on bone resorption in periimplant area

Factors	N	Year average resorption M±m, мм	Mombelli hygiene index	Shyller-Pisarev test
Bone type				
type D_1	35	0,13±0,02	1,22±0,05	2,14±0,09
type D_2	76	0,13±0,01	1,21±0,04	2,12±0,07
type D_3	83	0,14±0,03	1,26±0,06	2,21±0,08
type D_4	56	0,19±0,04	1,51±0,07	2,28±0,09
Implant topography				

Frontal region	43	0,13±0,02	1,32±0,07	2,11±0,06
Lateral region	207	0,14±0,02	1,34±0,06	2,32±0,11
Maxilla	115	0,14±0,02	1,15±0,06	2,14±0,08
Mandible	135	0,13±0,02	0,56±0,07	2,21±0,09
Length:				
<10 мм	17	0,19±0,03	1,40±0,08	2,18±0,08
>10 мм	233	0,12±0,01	1,28±0,03	2,14±0,07
Diameter:				
standard 3,75-4 мм	159	0,14±0,01	1,32±0,07	2,11±0,08
wide 4,5-5 мм	91	0,17±0,07	1,31±0,13	2,24±0,11
Antagonists:				
natural teeth	84	0,08±0,02	1,18±0,12	2,11±0,09
composite	82	0,15±0,02	1,33±0,08	2,21±0,08
ceramics	84	0,15±0,02	1,31±0,07	2,19±0,05

Year average resorption was 0,14 ± 0,01 mm, which is consistent with other researches. It was found that the average bone resorption around the implants was greater in the lateral regions, at the upper jaw, in the area of short implants and implants with large diameter ($p < 0.05$). The analysis found that the length of the implant is preventive key of late resorption. When using long implants (length> 10 mm), the average bone resorption was significantly less than in the case of short implants (length <10 mm) ($P < 0.05$). It is believed that short implants installed in more lateral sides, because of difficult access, the increased value crowns and implant, poor bone quality and anatomical constraints. Pronounced occlusal loading in the side area of posterior teeth leads to a significant bending moment, which can lead to severe marginal bone resorption. It is also proved that the quality of bone and loading conditions have a significant influence on the success of implantation.

Mandible has thicker cortical layer compared to maxilla, and sponge bone of jaws becomes more loose in the direction from frontal to distal areas. In our study marginal resorption was less in the area of the lower jaw implants and implants in the frontal section, which is consistent with the results of earlier studies.

Interestingly, we found no relationship between the state of soft tissue and bone level change in the area of the implant. In clinical periodontics, on the contrary, a great expression of gingivitis and plaque accumulation is often associated with severe of integration. Our results are consistent with results of Salcetti et al. [9], which demonstrated that plaque and bleeding indices can not be used to evaluate the soft tissues around implants. Therefore, interpretation of clinical data and its impact on marginal bone level change should be made cautiously and final conclusions on this matter requires additional clinical studies.

Obtained data, in our opinion, has significant value because it improves the understanding of factors that influence the late bone resorption in the area of implants and prosthetic efficiency results of treatment with fixed structures. Arguably, the average bone resorption is greater in the area of short implants and implants of large diameter. The most important factors that have influence on the value of resorption appeared to be length

and design features of the Zircon Prior implant intraosseus part, and the type of bone in the area of implantation. We have not found a clear relationship between early periimplant pathology and periodontal indications. According to some researchers, only with the express periimplant inflammation could be found some correlation between the periodontal indexes and periimplant bone defects.

Measurements of depth test ranged from 1 to 7 mm, 95.7% of sites had <4 mm. In seven areas identified PD - 5 mm, in five areas - 5 - 6 mm, and in two areas - 7 mm. The average value in the medial area was 2,9±0,7 mm, buccal - 2,2±0,8 mm, distal - 2,8±0,9 mm, lingual - 2,3±0,7 mm. In 51% of surveyed plots the measurement results were affected by bleeding. Size of plaque was 0,29±0,07. At 71.9% were found no accumulation of plaque, and in 24.4% the index ranged 1.9, in 2.5% - 2.0.

The implants around which in a term of five years were marked inflammatory phenomena, coupled with the loss of periimplant bone (different peiimplantitis by Jovanovich) amounted to 12.3%. Patients assigned to the group "unsuccessful" implants, depending on the stage of peiimplantitis were provided with proper therapy aimed to stop the progression of bone loss through the control of "plaque" and by the observance of safety measures and the elimination of implant-gingival pockets. In some cases with the periimplantitis of 3-4 class, we managed to restore lost bone using regenerative surgical procedures.

In modern dentistry implant treatment can not be considered successful if the patient is not satisfied with it, even when considering the clinician achieved perfect function and aesthetics. According to Smith and Zarb, «implant should not disturb the establishment of prosthetic restoration, the exterior of which satisfies both the dentist and the patient." Therefore, we conducted a survey of patients who underwent orthopedic treatment based on dental implants. The analysis profiles are presented in Table 2 and Figure 4.

Table 2

Overall satisfaction with implant treatment

Criteria	Excellent	Good	Satisfactory	Unsatisfactory
Comfort	87,0	11,6	1,4	-
Ability to speak	85,5	11,6	2,9	-
Layout	79,7	17,4	2,9	-
Ability to chew	78,3	14,5	7,2	
Ease of implants cleaning	49,3	37,7	11,6	1,4
Overall satisfaction	81,2	17,4	1,4	-

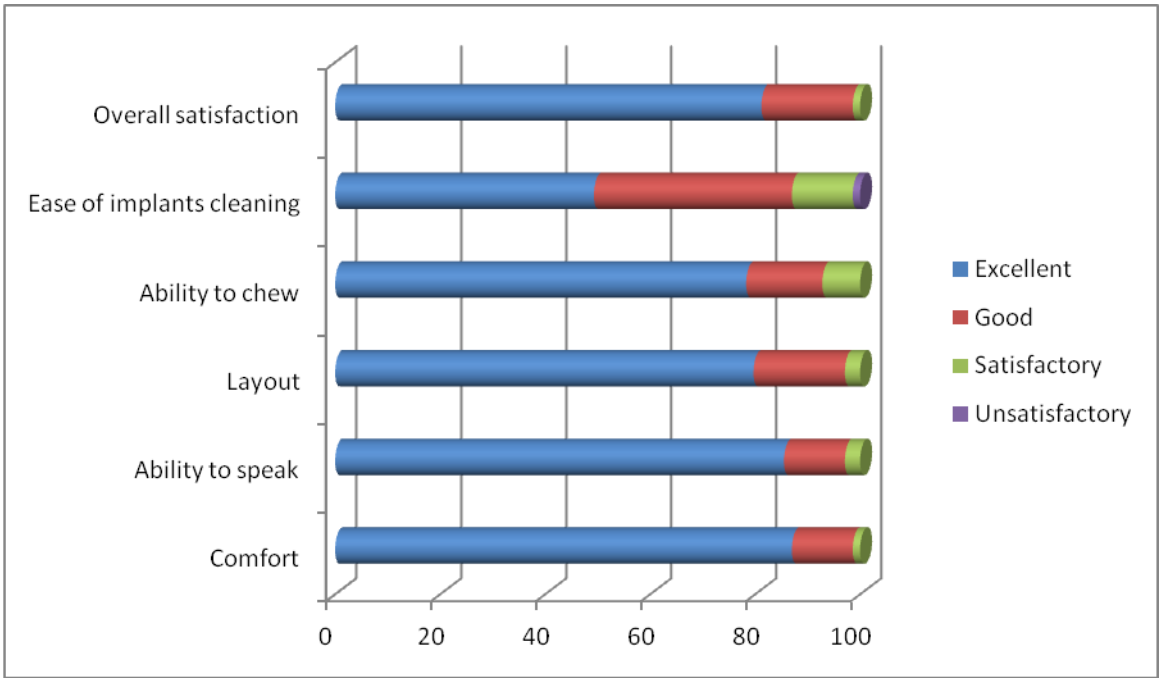

Figure 4. Overall satisfaction with implant treatment.
69 patients completed the questionnaire

The analysis of the survey results showed that the vast majority of patients were satisfied with the treatment, 81.2% rated it as "excellent", 17.4% instill "good." One of the patients assessed as "satisfactory" (1.4%), unsatisfactory ratings were not found. The highest satisfaction fell on factors such as comfort (1.16) and the ability to speak (1.17), followed by layout (1.26), the ability to chew (1.29), ease of cleaning implants was in last place (1.64). Less than 50% of patients given "excellent" evaluation for ease of implants care. In our study, most patients (98.6%) rated the implant treatment as "excellent" or "good." A more detailed analysis of the questionnaires showed that the care of implants is a problem in 10% of cases. Similar results were obtained in the study done by Pjetursson et al [10], where 17% of patients complained of difficulty of implants hygiene.

Conclusion. Immediate installation of Zircon Prior screw implants in tooth socket after extraction provides effective cosmetic result by forming appropriate structure and architecture of alveolar bone and correct soft tissue contour. Early implant loading and restoration of dentition defect eliminates psychological and emotional trauma, linked to the lack of teeth in an aesthetically significant area, and eliminates the need for temporary removable prosthesis.

Implants, around which at the first year was marked inflammatory phenomena, coupled with the loss of periimplant bone of different severity were presented by 12.3%. Patients assigned to the group "unsuccessful" implants, depending on the stage of pathology were provided with proper implant therapy, while in some cases, even with 3-4 class of periimplantitis, we managed to restore lost bone using regenerative surgical procedures. It was also established that the most important factors that have influence on the value of late bone resorption appeared to be length and design features of the intraosseus part of Zircon Prior implant, and the type of bone in the area of implantation, rather than periodontal parameters. In general, according to the survey, the

majority of patients (98.6%) rated the prosthetic treatment supported by Zircon Prior dental implants as "excellent" or "good."

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