In order to solve this task, dental and laboratory examination of 105 children aged 12 was carried out. 65 children suffering from diabetes mellitus treated at the Pediatric Endocrynology Department of the Municipal Institution "Regional Pediatric Clinical Hospital" were examined including 35 patients with diabetes lasting up to 5 years (group 3), and 30 patients with diabetes mellitus lasting longer than 5 years (group 4). The groups of comparison consisted of children without underlying pathology with healthy periodontium (group 1 contained 22 patients) and with chronic catarrhal gingivitis (group 2 contained 18 patients).

Children's oral fluid from the observation groups was the material for additional examination. The following parameters were determined: the level of diene conjugates, Malone dialdehyde by N.D. Stalna's method [1977]; catalase activity with the use of ammonia molybdate [M.A. Koroliuk,1988]; SOD activity by S.Chevari's method [1985]; POM [E.E.Dubynina, S.O. Burmistrov,1995] in modification [I.F. Meshchyshen,1998]; whole protein; ceruloplasmin; HS-group.

The parameters of lipid peroxide oxidation of the oral fluid of children from the observed groups possessed a reliable difference depending on the general health state and periodontal tissue condition. The best parameters were observed among somatically healthy children and intact periodontium. The worst parameters were found among children with chronic catarrhal gingivitis and diabetes mellitus lasting longer than 5 years.

Protein oxidative modification degree in children from group 1 is 1,28 times lower than in children from group 2. The parameter increases among children suffering from diabetes mellitus lasting up to 5 years (1,15 times) and those with the duration more than 5 years (1,22 times). The concentration of diene conjugates was the highest among patients with chronic catarrhal gingivitis and duration of diabetes mellitus more than 5 years. In comparison with somatically and stomatologically healthy children this parameter increased 3,73 times (5,18±1,45 mcM/ml in group 1 against 19,31±0,81 mcM/ml in group 4). A similar tendency was found concerning Malone dialdehyde. The numerical values deteriorate among children with chronic catarrhal gingivitis, and it becomes of a maximum value among patients with inflammatory processes in the periodontal tissue and diabetes mellitus lasting more than 5 years.

The whole protein parameter is of a special attention, since it increases 5,3 times among the patients from group 4 in comparison with group 1, and the parameter of catalase activity decreases 3,8 times (6,69±1,15 nmol/min*mg of protein in group 1 against 1,75±0,02 in group 4). Our research found its decrease among the patients from groups 2, 3 and 4 in comparison with healthy children (group 1). The worst parameter was found among children from group 4. A probable difference of superoxide dismutase enzyme activity among children with different duration of diabetes mellitus was not found, but the parameters were worse among patients suffering from diabetes mellitus more than 5 years (5,03±0,13 UN/min* mg of protein in group 3 against 4,42±0,05 in group 4).

The parameters of activity of HS-groups and ceruloplasmin decrease in case of inflammatory processes in the periodontal tissue, especially among children suffering from diabetes mellitus longer than 5 years.

Thus, the results obtained force us to regulate the processes of antioxidant protection among children with chronic catarrhal gingivitis especially with diabetes mellitus by means of development of therapeutic complexes which is a subject of the further research.

Kasiyanchuk M.V.

NEUROLOGICAL MANIFESTATIONS IN THE CLINIC OF DENTISTRY: FEATURES OF COMPUTER SUPPORT IN PRECLINICAL AND CLINICAL RESEARCHES

Department of Prosthetic Dentistry
Bukovinian State Medical University

Surgical trauma is known to provoke loss of the osseous tissue at the first and second stage of implantation which is evidenced by many literary reviews. We believe that one of the ways to

prevent it is to use interactive techniques. And the development of telecommunications technology encourages us to improve medical technology.

The aim of this study was to evaluate the manifestation of soliton in bone tissue, relevance in a preclinical study using ANDROID technology in the use of endoscopy and medical navigation during surgery to maximize the preservation of bone tissue.

An experimental surgery on dental implantation was performed in the laboratory on the bone specimen of a dead animal (piglet under 6 months) with further registration of the influence of physical factors on the periosteum in the implant area. Phantom implants (real analogue: D = 3.5mm; L = 6.0 mm) were used for this purpose. While planning the laboratory experiment, it was assumed that uncontrolled pressure (traumatic stimulus) on the periosteum occurs during surgery, which becomes a pathogenic destructive factor.

To control the movement and positioning of the implant, we used our own method using a navigation module (Ukrainian patent № 68641), which was integrated with a mobile phone on the platform "ANDROID" via a micro-USB port (2x7) type B ("Navigator UK-A"). The receiver of the device is fixed rigidly relative to the bone specimen. The positioner is integrated with the tip of the device, the movement is fixed at the conditional point of the implant. The smartphone, on the screen of which the operation is monitored, is conveniently fixed in the holder (clamp to the car panel). We compared the results of the experiment with the results obtained in the experiment with navigation systems integrated with a desktop computer running the "WINDOWS" OS via a USB port (Navigator UK-A).

With deviations from 25 to 5 angular minutes, the accuracy (positioning) is not less than 10%, with smaller deviations it falls to 18%. The gap of up to 0.1-0.5 mm between the periosteum and the implant platform is boundary. At the same rotational force in the area of the implant platform, the pressure on the bone tissue increases disproportionately, and at some value is destructive. Uneven deformation of adjacent bone structures was found. Comparing experiments, the results are comparable, the difference in data rate is not subjectively determined.

For visual examination, an endoscope installed on the platform "ANDROID" was used. In 22% of cases, manifestations of the process of deformation of the bone layer, the manifestation of soliton in bone tissue, not visualized by conventional observation were found. The efficiency of endoscopy by the suggested method was 92%. The use of the ANDROID platform in medical navigation and endoscopy systems is relevant in connection with the development of telecommunication technologies.

Statistical analysis of the data confirmed the effectiveness of our original method during the sinus lifting procedure, namely, confirmed the dependence of a successful completion of the operation and a positive dynamics in the postoperative period from the selected method. The use of an advanced method of radiovisiography and a modified sensor allowed to detail the bone architecture of the adjacent soft tissues from 44.8% to 100%. ± 1.5% and differentiate adjacent soft tissues, including atrial ones - 67.1 ± 6%; reduce the exposure by one order of magnitude - 0.08s ± 8%, according to X-ray image of the device.

Killmukhametova Yu.H.

VISUAL OBSERVATION OF THE EFFECTIVENESS OF THE COMPOSITE MIXTURE OF DRUGS WITH ANTIOXIDANT AND ANTIMICROBIAL ACTION ON NECROTIZING ULCERATIVE GINGIVITIS

Department of Therapeutic Dentistry
Bukovinian State Medical University

The study was aimed to determine the effectiveness of the developed treatment regimen, which included applications of a mixture of ointments of thiotriazoline, zinc oxide, and 0.05% solution of chlorhexidine bigluconate, on the healing process of ulcerative lesions of the maxillar process mucosa in experimental animals. We used the data of visual observation to assess the course of the pathological process as a criterion of evaluation.