The developed algorithm of differential DNA diagnostics of Prader-Willie syndrome allows to detect all types of molecular genetic disorders of chromosomal region 15q11-q13 and to differentiate each of mutation types. In PWS group we observed the significant prevalence of males – 70% (42 of 60), but the frequency of detected alterations in females was higher than in males - 56% (10 of 18 patients) and 36% (15 of 42) correspondently. This can indicate that less strict diagnostic criteria for males lead to incorrect overdiagnosis of PWS in the current group. The low detection rate in AS could be due to both clinical misdiagnosis and limitations of the used method of molecular analysis. To improve the detection rate of molecular causes of AS further molecular analysis of AS associated genes, such as *UBE3A* and *MECP2* should be done. Extension of STRs loci set could provide additional information about deletions length and it correlation to phenotype.

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Key words: *Prader-Willi; Angelman; Deletions; Uniparentaldisomy*

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CLINICAL AND DIAGNOSTIC INFORMATIVENESS OF THE DETECTION OF OSTEOMARKERS IN BIOLOGICAL FLUIDS OF THE ORAL CAVITY IN DENTISTRY

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Recently, due to the progressive development of a laboratory clinical base, the range of osteomarkers characterizing the activity of osteoresorption and osteosynthesis has expanded, including the postoperative period of surgical interventions in the maxillofacial region. Bone grafting of the alveolar process of the upper jaw after sinus lift in patients with extensive dentition defects, after surgical treatment of chronic generalized periodontitis (CGP) of severe severity, especially in elderly and old patients, requires careful control of the nature and intensity of bone remodeling alveolar process of the jaws during the rehabilitation period [3]. Most osteomediator determined in serum [2]. Meanwhile, many mediators reflecting osteoplastic processes are synthesized and secreted not only by osteocytes, but also by epithelial cells of the oral mucosa, fibroblastic cells of periodontal gums, tooth pulp, [1]. In this regard, the study of the dynamics of the concentration of osteomarkers in the oral fluid at various stages of the postoperative period of surgical treatment of patients with severe CGP, after sinus lightening and dental implantation can determine the correct strategy for the rehabilitation of patients, reflect the intensity of remodeling of the bone tissue of the alveolar process of the lower jaw. The aim of the work was to evaluate the clinical and laboratory information content of the evaluation of osteomediators in the oral fluid in order to prevent osteoresorbtive complications in patients after surgical interventions in the maxillofacial area.

Materials and Methods. The study included 31 patients with severe CGP (18 women and 13 men), who underwent osteoplastic materials during flap operations, as well as 56 patients with extensive dentition defects (34 women and 22 men) after performing

open sinus lifting and dental implantation. The average age of patients with chronic hepatitis C was 43,9±1,5 years, in patients with extensive dentition defects and atrophy of the alolar process of the jaws – 68,9 ± 2,7 years. Healthy donors (n = 29) aged 40-60 years formed the control group. Initially, as well as 12 months after surgery, oral fluid was collected in a volume of 20 ml in the morning on an empty stomach from 8 to 9 hours by spitting into a test tube. The supernatant was obtained by centrifugation (8000 rpm for 15 minutes) and stored at -30°C. Next, in a mixed saliva using an enzyme immunoassay on a Lisa enzyme immunoassay analyzer (Erba Lahema Sr.o., Czech Republic), the concentration of the ligand of a soluble activator of the nucleation factor kappa B (sRANKL), osteoprotegerin (OPG), the bone isoenzyme of alkaline phosphatase (AP) was measured. The concentration of sRANKL was determined using Ampli-sRANKL diagnostics (Biomedica, Vienna, Austria), osteoprotegerin Osteoprotegerin kit (Biomedica, Austria), KSchFF using Alkphase-B single channel kits (Metra Biosystems, USA).

Results. As a result of a laboratory study of oral fluid at the first stage, average values were obtained from healthy donors (Table 1). Changes in osteomarkers in the oral fluid in patients in the postoperative period of surgical interventions are presented in Table 2.

Table 1. Indicators of the concentration of osteomediation in the oral fluid to healthy donors

Indicator	Healthydonors (n=29)
Bone alkaline phosphatase, U/ml	22,5±1,2
Osteoprotegerin, pg/ml	84,8±2,3
sRANKL, pg/ml	2,9±0,2

Table 2. Change of osteomarkers in the oral fluid in patients in the postoperative period of surgical interventions

Indicator	Initial	After 12 months
After flap operations for severe CGP (n=31)		
Bone alkaline phosphatase, U/ml	62,7±2,3	91,7±3,1*
Osteoprotegerin, pg/ml	55,2±1,2	96,3±3,3*
sRANKL, pg/ml	3,5±0,5	2,2±0,3*
After sinus lifting and dental implantation (n=56)		
Bone alkaline phosphatase, U/ml	55,2±2,3	64,1±4,1*
Osteoprotegerin, pg/ml	45,2±1,9	50,6±2,5
sRANKL, pg/ml	3,7±0,3	3,5±0,2

Note: * - significant differences compared to baseline with p <0,05

With severe CGP in patients after 12 months. after surgery, a favorable change in bone metabolism was observed in the oral cavity: compared with the outcome of OPG increased by 74,4% (p<0,05), limiting the concentration of sRANKL by 37,1% (p<0,05), the activity of CAF increased by 46,3% (p<0,05) (Table 2). In patients after sinus lifting and dental implantation, statistically significant differences (p<0,05) occurred only as an increase in bone alkaline phosphatase.

Conclusion. Detection of osteomarkers in the oral fluid informatively reflects the degree of bone remodeling after surgical treatment of severe CGP. For dynamic observation of patients after sinus lifting and dental implantation, the definition of osteomediators in the oral fluid is not very informative.

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Key words: *osteoprotegerin, ligand of a soluble activator of the nucleation factor kappa B, alkaline phosphatase, oral fluid, osteormodeling*

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SUPERWEAK LUMINESCENCE AS A MARKER OF DETECTION OF COLON CANCER

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Chemiluminescence (CL) is the emission of light waves accompanying chemical reactions. A necessary condition for all types of chemiluminescence is a chemical oxidation reaction. Spontaneous CLincludes three main types:

- superweak luminescence (SWL) is the glow of living organisms, tissues, cells, their homogenates and some biosubstrates in the visible and infrared specterof light (360-800 nm) [1, 2],
- bioluminescence is the glow in the visible specter of light(420-710 nm), inherent in many organisms (bacteria, fireflies, some fish, fungi and protozoa). In all cases, bioluminescence is the result of enzymatic oxidation of special substances – luciferins[3, 4],
- mitogeneticluminescenceis the glow in ultraviolet specter oflight (190-320 nm), which is observed during cell division [5].

CL is one of the main methods for studying the reactions of chain lipid peroxidation in biological membranes and plasma lipoproteins. The aim of this study is to analyze of spontaneous chemiluminescence in biological samples of patients with colon cancer.

Materials and Methods. The object of the study was normal colon mucosal tissue, colon cancer tissue and blood serum of patients. Biological material of four patients from "Mogilev Regional Oncology Dispensary" were analyzed with the following tumors: sigmoid cancer (T3N0M0), rectosigmoid cancer (T3N1M0), rectosigmoid cancer with peritoneum metastases (T3N0M1) andcecum carcinoma (T3N0M0). We used Tissue Lyser LT homogenizer (Germany) to homogenize tissue. The method