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ETIOPATHOGENESIS OF ENDODONTO-PERIODONTAL INJURIES AND COMPLEX TREATMENT METHODS

(Monography)

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ANNOTATION

Research within the framework of the Tashkent state dentistry institute to treat 326 people who did the patient and Samarkand state medical university, department of Therapeutic dentistry" Denta medical" clinic to the base appeal did, endodonto -periodontal injuries with 195 patients aged 18-55 the patient in detail clinical from inspection was conducted. Standard method microbiological inspection was conducted. Studies in 2 groups of patients carried out: periodontitis traditional treatment and "Vector" apparatus for periodontitis with treatment. Dental pulp functional situation recovery device "Vector". with common periodontal injuries from treatment after tooth hard tissues (root and dentine) to a minimum level of damage fall, as well as periodontal treatment more efficient the fact that was determined.

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INTRODUCTION

In clinical practice, dentists are often faced with combined damage of endodontic and periodontal tissues. These conditions are called endodontic-periodontal lesions (EPI) and represent a combined lesion of periodontal disease with inflammatory and destructive changes in the endodont and periodontium. This complex pathology poses important diagnostic problems for the doctor and requires extensive knowledge and understanding of their clinical manifestations, principles of diagnosis and treatment in endodontics and periodontology. Inflammatory process in periodontal tissues significantly affects the pulp of the teeth: irreversible changes in the pulp were detected in 54-56% of teeth with general periodontitis of the II degree. Chronic inflammation in the periodontium, pulp and periodontium is considered as an odontogenic focus, which in turn is a component of a chronic photogenic focus. Solving these problems is a pressing issue for researchers in this field.

Research is ongoing worldwide to develop effective interventions for the prevention and treatment of endodontoperiodontal lesions. From this point of view, the systematic clinical, biochemical, functional relationships of pathological processes in the cellular structures of pulp-periodontal tissues in patients with endodontic-periodontal injuries and the prognosis of changes in this process depending on the severity of periodontitis, as well as the scientific justification of effective treatment measures, are of particular importance. have In particular, when the effectiveness of traditional treatment of periodontitis changes, the functional state of the pulp, the recommended Vector apparatus, the blood circulation system of

the periodontium in the development of periodontal diseases, and the value of cytokine profiles should be developed by developing an effective and modern approach system for the treatment of different levels of periodontitis. In the treatment of periodontal inflammation, the introduction of the "Vector" device is of particular importance, and scientifically based modern effective methods of treatment by enriching the vascular system with natural ozone have been developed.

One of the urgent problems faced by medical specialists in the republic today is the development of the medical field, adaptation of the medical system to world standards, improvement of the health care system, and reduction of oral cavity diseases.

In accordance with the "Strategy of actions on the five priority areas of further development of the Republic of Uzbekistan in 2017-2021" "Increasing the quality and convenience of providing medical and medical-social services to the population, promoting a healthy lifestyle, aimed at strengthening the material and technical base of medical institutions, improving the health sector . A new level of diagnosis of endodonto-periodontal damage, by improving the use of modern technologies, timely provision of quality medical care allows to reduce the level of dental diseases.

To study advances in the field of treatment and prevention of endodontic-periodontal injuries in the world's leading research centres and universities, including: University of Kansas, University of Texas at Arlington (USA); University of Tokyo (Japan); University of Edinburgh (England); South Korea University (South Korea); Norwegian University of Science and Technology (Norway); Universidade de Uberaba, Estacio de Sá University,

Federal University of Rio de Janeiro; Universidade Estadual Paulista (Brazil); University of Amsterdam, The Netherlands University (Netherlands); University of Western Australia (Australia); Cairo University (Egypt); Taipei Medical University, Taiwan (Taiwan); Tashkent State Dental Institute (Uzbekistan) take went scientific studies seeing released.

A number of scientific studies aimed at improving the prevention and treatment of endodontic-periodontal injuries are being carried out in the world, in particular: establishing the mechanism of diagnosis and treatment of the endodontic-periodontal field in the region; substantiating the system of early diagnosis and treatment aimed at restoring the vitality and functional state of the dental pulp in endodontic-periodontal injuries; periodontal pathogens and LPO-AOT processes, periodontal microcirculation, the level and characteristics of cytokines, inflammatory-destructive damage of the periodontium, as well as measures aimed at improving the system of electrophoresis treatment with the help of ozone and ultrasound using the Vector apparatus in vascular channels are being developed.

Thus, the endodontic-periodontal syndrome is a unique combination of several interrelated symptoms of pulpitis and periodontitis, a set of symptoms united by the unity of pathogenesis. Apparently, the disruption of the system of interaction between the periodontium and the endodont is one of the most important pathogenetic features of this syndrome, in which the organism independently eliminates the pathological center (inflammation) both in the periodontium and in the endodont can't .

Abbreviations

Aa	Agregate character aktinomycetev comitanss
AOS	Antioxidant system
DNA	Deoxribonucleic acid
EPI	Endodonto-Periodontal injuries
Ed	Electro odontic diagnostics
Fn	Fuzobacterium nucleatum
GI	Gingival index
MI	Microcirculation index
Ohi-s	Oral Hygien index simplex
OPTG	Ortopantodramm
PChR	Polymeraze chain reaction
POL	Perioxide oxidation of lymphocytes
PP	Porodontal pocket
Pg	Porphyromonas gingivalis
Pi	Privonella intermedia
PEE	Pulp electrical excitability
RNA	Ribonukleic acid
Tf	Tanerella forsuthia
Td	Treponema denticola
VTRRF	Vertikal tooth root result fracture
WHO	World health organization

Part 1. CLINICAL AND DIAGNOSTIC ASPECTS OF ENDODONTO-PERIODONTAL INJURIES.

Clinical practice dentists often endodontium and of the periodontium inflammatory and destructive changes with passing endodontium and of the periodontium joint damage has been endodonto -periodontal so-called lesions (EPI). to injuries face they come Complex pathology diagnosis point of view in terms of doctor for important problem being their clinical views, endodontics and in periodontology diagnosis and treatment principles about wide knowledge and requires understanding of the problem importance that is, periodontium, pulp and in the periodontium chronic inflammation odontogenic as a hearth it is considered while own in turn chronic stomatogenic of the hearth structural element.

Diagnostics . EPI right diagnosis each one of the situation forecast and treatment in determining very important EPI clinical appearance many studies differential in diagnostics help giving differential diagnostic symptoms to determine possibility will give. In the diagnosis of EPI complete and deep clinical to check, that's it including anamnesis, mouth space examination, pain sensitivity examination, thermodiagnosis , rentgen and microbiological to inspections great importance.

With that together, **sharp endoperiodontitis clinical in the signs** of the jaw cause topographical in the zone pulsating pain, percussion and palpation during pain, teeth mobility increase of marginal property swelling note will be done. From this except, periapical of an abscess purulent the contents of the periodontal pocket through, as well as periodontal ligaments through maxillary sinus or nose to the void come. This is usually in a periodontal

pocket of the root different by harvest to be possible of the narrow road is the result. This way tooth root across to the top until traditional probing check through determination. A lot rooted in the teeth course usually furcation in the zone will be X-ray inspection as a result furcation in the zone periodontal in illness the crash reminder the destructive zone is determined. In other cases, periapical abscess containing pus root peak in the field cortical bone plate through, osteoporosis toothless tooth through road can also be found [18].

Chronic endoperiodontitis most of the time with x-ray information is determined, this alveolar of the bone periapical and marginal parts destructive the process makes reflection.

Simple endoperiodontitis primary endodontic process is considered Endoperiodontitis usually instigator tooth in the field simple, complex or symptomatic pathological process in the form of occurs and different level weight with continue is enough. Endoperiodontitis shape clinical symptoms and x-ray information in existence diagnosis is placed, in which the lateral channels existence, root channel to fill quality, root peak condition, furcation participation existence, interalveolar of the septum not to be done [36].

Complicated endoperiodontitis average and heavy in weight and occlusive trauma in periodontal patients with occurrences in them tooth of cement integrity breaks down.

Also **symptomatic** root of **endoperiodontitis** perforated , tooth root vertical broken and tooth root resorbed in patients endodontic and periodontium tissues destroyed observing the form as well can. Root perforation as a result come out symptomatic endoperiodontitis root channel wrong mechanic

treatment with sudden pain appear to be and from him blood of leaving appear to be with is described. In the future this endoperiodontitis development will come. Root perforation as a result surface coming of endoperiodontitis the following clinical signs observed - trigger tooth periodontal pocket in the area detection, acute periodontal abscess, periodontal pocket pus separation of teeth movement level increase, alveolar in the fence obvious identifiable destructive processes and etc.

Vertical tooth root as a result of fracture (VTRRF). **symptomatic periodontitis.** Vertical fracture is lengthwise or tooth direction slope corner under has been fracture. Vertical fracture tooth whole length across or cracking through root from the surfaces one own into received without to be determined can.WS Usually, the fracture is soft periodontal in tissues inflammation process with together comes, that is endoperiodontitis will appear Clinical symptoms: gum or tooth in the field from time to time with pain, acute periodontal abscess, endodontic abscess, deep periodontal pocket, fistula of the road to be determined and etc.

Root resorption with dependent **symptomatic endoperiodontitis.** Root of the tooth resorption without symptoms, without complaints and without periodontal defects will happen but sometimes, periodontal abscess and deep periodontal pocket formation together have been circumstances there is. This is symptomatic endo-periodontitis diagnosis for basis will give. Usually, root resorption instigator tooth topographical zone difference in the plains held using x-ray diagnosis is determined [25]

Your tooth situation determination and periodontal tissues inflammatory-destructive injuries spread nature and direction determination methods work output, endodonto -periodontal pathology bone tissues of resorption main

principle, topography and direction according to systematization, differentiation and classification enable gives, this while of diagnosis reliability increases and cause teeth save to stay prospects prophecy to do possibility will give. Injury spread essence and direction determination of pathology manifestation to be to systematize it from periodontitis to differentiate, of changes primary characteristics, causes, distribution direction to determine and bone tissues damage weight to classify possibility.

So, EPI x-ray image analysis to do based on bone 4 types of resorption were distinguished:

Type 1A. To the periosteum harm did not deliver without endodontic - periodontal damage - in the region odontogenic come coming out root surrounding tissues destruction (according to WHO tooth formula).

Type 1B. Periosteum damage with endodontic - periodontal damage. Jaw localization and surface from harm periosteum with is displayed. This in the round root surrounding tissues diffuse radial resorption will happen

Type 2. of periodontium hearth destruction with together happen has been endodontic - periodontal damage. He is above parameters (segment, WHO formula) and root surroundings resorption type with is described.

Type 3. Chronic hearth periodontitis with combined endodontic - periodontal damage. He is with type 2 one different parameters with described, but from the marginal zone root to the apex until resorptive process rule.

4 types. Focal, generalized in the form of periodontal injury (stage, WHO formula, pocket depth) pulp from the situation independent respectively differentiation is done.

Other the authors x-ray inspection during EPI the most wide 7 types of spread found out:

Type I- Chronic granulation / granulomatosis of periodontitis bone tissue two bilateral vertical destruction with combined condition (6%);

Type II - chronic granulomatosis of periodontitis (cystogranulomas). tooth around / root surroundings obstacles vertical and horizontal type bone destruction with combined status (8%);

Type III- Chronic granulomatosis tooth of periodontitis (cystogranulomas). around / root surroundings obstacles horizontal type bone destruction with combined status (18%);

Type IV- Chronic granulating of periodontitis tooth around / root surroundings obstacles vertical type bone destruction with combined status (12%);

Type V - Chronic granulating of periodontitis tooth around / root surroundings obstacles vertical and horizontal type bone destruction with combined status (10%)

Type VI- Chronic granulating of periodontitis tooth around / root surroundings obstacles horizontal type bone destruction with combined status (20%)

Type VII bone tissues periodontal and periapical destruction hearth (27%).

On the basis of clinical examinations, it was concluded that endodontoperiodonal diseases as a characteristic sign of X-ray image: focal destruction of the bones of the periradicular area with vertical and / or horizontal resorption of the barrier between the tooth roots [31; p.224].

In order to assess the condition of periodontal and periodontal tissues in periodontitis and periodontitis, an analog-visual scale that separates diagnostic signs on the basis of a point scale is proposed:

Degree of interalveolar barrier destruction: absence - 0, initial - 1,

1- level - 2,

2- level 3,

3rd level - 4;

Bone inside of pockets availability - 5;

availability of osteoporosis and osteosclerosis of their hearths - 6;

periapical pathological furnace with bone inside of their pockets communication - 7;

periodontal cavity expansion - 1; periapical area bone tissue destruction - 3. 35-44 years old (10 men and 20 women) of molars apical chronic periodontitis diagnosis placed patients was studied. Endo-periodontal of changes three options found: the first - in 83% of cases (25 patients) periodontitis and periodontitis signs observed, but diseases to each other effect without respectively continue . The second - in 7% (2 patients) cases periodontitis and periodontitis signs almost one of the time in itself appear it has been. Third - in 10% of cases (3 patients) periodontal disease and in the periodontium changes appear independently [11].

Inspection stages to the sequence compliance done in case of endoperiodontal injuries **optimal diagnosis** to the conclusion to arrive possible .

First stage: Patient with acquaintance - of the patient to the doctor has been confidence based on contact installation own into takes Endoperiodontal of injuries development effect doer common characteristic factors

determination for of the patient common situation anamnesis. Doctor of the patient companion diseases determines: heart-blood vein system, endocrine disturbances, contagious diseases and others, as well as in the patient addict substances or food products allergic reactions inclination.

Life anamnesis. The patient his profession, heredity, himself catch habits (mouth to the void care to do, bad habits - smoking) to know important

Complaints. They are endodontic and periodontal character have to be can: pulsating pain, when bitten, teeth movement level, tooth property swelling, suppuration, abscesses appear to be Patient before is it treated? or lack of treatment effectiveness, how often recurrence and this recurrence what with to bind determination need.

External check Face, skin, submandibular lymph nodes configuration.

Oral condition of mouth mucus floor status determined (drying , painting , palpation methods used), hygiene , oral bad breath , saliva and teeth situation check. Lost of the teeth the number and reason, sensitivity, movement level, tooth percussion, pathological migration presence, occlusion relationships are determined.

of the periodontium primary visual features tooth property check own into takes. His color, size, contour, consistency, consistency place is determined. Then, the tooth-gum joint change the air flow or using light probing is determined. Dental property and tooth-gum ligaments to the situation according to the periodontium pathological to the process the addition of offer will be done.

Initial diagnosis. Complaints of the patient common situation and vital anamnesis, mouth space condition of the periodontium primary visual features determination based on is determined.

X-ray check tooth hard tissues, periodontium and of the periodontium situation to determine main method is considered This is retrospective diagnosis method. Directed x-ray images, OPTG, computer tomography using caries of the process localization, pulp of the camera condition of the denticles, the presence of channels obliteration, internal resorption of the canal curvature level, root refraction, alveolar of the bone resorption and nature note reach.

More studies. Hygiene from the indexes used without supra and subgingival teeth plaque presence (OHI-S Green Vermillion, 1964).

Pathological in progress tooth property participation reach level. The most objective GI index (Hloe , J. Silness , 1963), because of inflammation main symptom - blood to leave account takes.

Other circumstances account taken: stagnation, hyperplasia, gum atrophy.

Periodontal tissues destruction level of periodontal pockets existence probing the way and periodontal indices determination with is evaluated.

From occlusion injury - early connections detection, occlusion of injury clinical and X-ray signs.

Endoperiodontal in injury participation reached the tooth in detail check requires electrodontometry. With that together, electricity tests blood supply about enough information does not give Laser-optical diagnosis and Doppler flow measure even initial microcirculation violations determination for efficient is a method.

Laboratory diagnosis. Pulp and periodontal tissues histomorphological studies electron level done is increased. Modern of methods used without microbiological studies: PSR, probe -DNA.

EPI enough diagnosis issues seeing coming out many researchers to the diagnosis endodontic and of the periodontium present status about information the introduction need they emphasize. Endodontic pathology and periodontal disease signs showing tooth "combined endodonto - periodontal classification as a disease it is necessary Sometimes combined of injury reasons obviously, another cases of injury the reason determination possible it's not. Combined injuries mutually in binding this to emphasize need. So we have there is in the literature endodontic and of the periodontium joint injuries clinic and diagnosis issues widely illuminated. Combined of injuries high spread, their clinical polymorphism there is. Endodonto -periodontal of injuries development main reason determination each always difficult, etiological point of view from the point of view they are endodontic or periodontal pathology based on developments, but clinical in practice endodontic and periodontal injuries often occur. Only complete diagnostic studies, that's it including anamnesis complete examination, clinical check and x-ray inspection of the process endodontic etiology superiority or cure tactics in defining solution doer important have has been periodontitis existence confirmation.

1.1 CLASSIFICATION OF ENDODONTO-PERIODONTAL INJURIES.

Endodont and of the periodontium anatomical and physiological proximity and that's it with together their high functional differentiation inflammation during periodontium and of endodontics complicated damage take it comes anatomical and topographical of zones each how localization will be done and endodonto -periodontal of injuries development will take come.

Endodonto-periodontal damage (EPI) is a combined endodontic and periodontal damage accompanied by inflammatory and destructive changes in the periodontium.

Complex pathology is an important problem for the doctor from the point of view of diagnosis and treatment, and requires deep knowledge and understanding of clinical manifestations, principles of diagnosis and treatment in endodontics and periodontology.

Currently, there are many classifications of EPI, taking into account the etiological diagnosis, localization and the causes that lead to joint damage. Various authors sure of research the goal and tasks looking different from classifications they use This in the review practical in dentistry applied of EPI modern classifications given. 1972 by Simon, Glick and Frank offer done the first classification infection appears to be and that's it including main of injury localization based on:

periodontal to tissues inflamed of the pulp temporary, clinical in terms of sure didn't happen effect with primary endodontic injuries;

long term endodontic pathology with which develops of the periodontium second level participation with initial endodontic injuries;

inflamed periodontal of tissues to the pulp temporary, clinical in terms of sure didn't happen effect with initial periodontal injuries;

periodontitis development during pulp lateral canal or apical hole through contagious if so, of the pulp second level participation with initial periodontal injuries;

endodontic and periodontal pathology one of time in itself appeared when it was and of the process endodontic etiology or periodontitis existence as a

result when developed really combined injuries, this treatment tactics in parallel in determining solution doer important has.

Rothstein and by Simon (1971). in classification periodontium tissue attraction to do sequence in consideration received without injury localization of doing superiority account is taken:

Class I : Primary endodontic injury;

Class II : Primary periodontal injuries;

Class III : Combined injuries, that's it including:

A) Periodontal secondary involvement with initial endodontic injuries;

B) Endodontic second level participation with initial periodontal injuries;

C) Real combined injur.

of Guldener AN (1967). classification according to the disease etiological mechanisms, periodontal tissues anatomical and topographical localization and periodontal of injuries to the weight main accent given:

Class I: Primary endodontic injuries.

I (A): random perforations (alveolar) or resorption (internal resorption).

I (B): Chronic periradicular injuries (granulomas or cysts) or sharp periradicular injuries (alveolar abscess).

Class II : Primary periodontal disease

II (A): Active periodontitis apical a hole with or without participation;

II (B): Endodontic secondary participation. Pulp necrosis has been or without, lateral channels or dentin tubules through of infection periapical to the field secondary pass.

Class III: Combined injuries.

Real combined injuries (mutual intervention of periodontitis and endodontic injuries) or vertical root fracture resulting pulpitis [26]

Geurtsen and others, Ol Haueisen and Heidemann (1985), injury forecast account received without classification:

1) Only root canals requiring treatment combined injuries (good prognosis).

2) Endodontic and periodontal requiring treatment combined injuries (so comfortable didn't happen forecast).

3) Successful to treat hopeful did not happen combined injuries (bad prognosis).

In Franklin, S. Wein's (1972) classification etiological factors and symptoms as well as x-ray image account received:

Class I : Periodontitis signs clinical and X-ray in terms of imitation was, but actually pulp inflammation and / or pulp necrosis has been tooth.

Class II: At the same time in itself periodontal and periodontal diseases there is tooth.

Class III: Dental pulp not damaged, but periodontitis treatment for endodontic treatment and root amputation required status.

Class IV : Actually tooth to periodontitis met , but Pulpit or periodontitis clinical and X-ray signs similar to tooth [23].

Hiatt A. classification (1967) appeared of being clinical and etiological causes of pulp clinical condition, periodontal don't get hurt weight and duration account.

Grade 1: Medium in weight short term from periodontitis after appearance has been pulp damages;

Grade 2: Middle level long lifetime continued reached from periodontitis come out pulp damages;

Class 3: Pulp in the presence of short term periodontal injuries;

Class 4: Secondary pulp in the presence of long-term periodontal injuries;

Grade 5: Hymesection or root from amputation after periodontal injuries;

Grade 6: Complete and complete did not happen tooth crown and root fracture;

Grade 7: Independent pulp and periodontal lesions together, one to injury merger;

Class 8: Periodontitis from treatment after appearing has been pulp injuries;

Grade 9: Pulpit from treatment after which develops periodontal injuries [27; p. 63].

of EPI the most last from classifications one By Hany Mohamed Aly (30). offer done. Injury development type and etiopathogenetic factors account received without 7th grade own into takes :

Class I At one time in itself (combined) endo-periodontal injuries;

Class II Primary pulp damage from it after the periodontium addition;

2.1. Local injuries;

2.2. Comprehensive injuries.

Class III Primary periodontium damage from it after the pulp addition;

Class IV Independent endo-periodontal injuries;

Class V Iatrogenic endo-periodontal injuries:

5.1. Endodontic treatment because of periodontal injuries,

5.2. Periodontal disease treatment as a result pulp injuries.

Class VI Common endo-periodontal injuries:

6.1. Primary endodontitis with extended endo-periodontal damage,

6.2. Primary periodontal injuries with extended endo-periodontal damage.

Class VII Unspecified endo-periodontal lesions [21].

Grandma LN and others (2012) endo-periodontal injuries check this in the situation sharpened stage sharp or chronic endo-periodontal of injuries clinical the picture observation noted as possible reached [23]

Same that's it the author of the process nature , form , distribution and weight account received without classification offer.

1. Duration: 1.1. sharp 1.2. chronic 1.3. chronic or don't sharpen an abscess increase; 1.4. remission.

2. Form: 2.1. simple 2.2. complex; 2.3. symptomatic.

3. Distribution: 3.1. localized.

4. Weight level: 4.1. light 4.2. middle 4.3. heavy.

EPI above classifications many in classifications applied the most wide spread out symptoms and syndromes make reflection.

Endodontists the first in line endodontic injuries with being engaged because of pulp of inflammation to the periodontium the effect of this without there is although clinical in terms of not expressed and does not require treatment and the same that's it thing pulp without participation initial periodontal also applies to injuries and later only they are to classification added and in treatment different direction about EPI, which requires an approach, namely:

second level periodontal damage with endodontic injuries;

secondary pulp in the presence of periodontal injuries;

really combined injuries [10].

Secondary periodontal damage with passing endodontic injuries initially healthy has been of the periodontium damage with is described. Increased periodontitis long time during not being treated as a result

secondary edge periodontium with secondary endodontic damages and periodontium tissues secondary the addition, in this case, leak road in the field biofilm (and later on tooth stones) accumulated it remains while of the bone resorption of the epithelium to growth and periodontal pocket formation takes place often this damage type is high in the teeth palate roots in the region It develops while bone defect like crack together will come. Periodontal flaw, obviously limited and sure reasons have won't be (many in quantity tooth looks to the meeting conditions creator poor quality restoration; interdental of contact deficiency, occlusal trauma). Damage off devital (dead) tooth existence of this main is a condition. The majority of cases in the periodontium injuries narrow one periodontal pocket have been, him determination for tooth-gum combination maximum level check need [19].

Pulp secondary involvement with passing periodontal injuries. Periodontal of treatment long time during take not going with, progressive periodontal pocket apical into the hole or lateral canal to the hole arrived to go can, as a result pulp inflammation and to necrosis take will come. So and pulp secondary participation with passing periodontal damage comes out. This kind of damage with one rooted of the teeth forecast a lot rooted to the teeth than worse because in the second , the surroundings of tissues damage different roots for differently to be able. This is characteristic clinical of characters lack of with is described. Pulp inflammation of the process desired stage. Pulp into infection come in to go possible has been periodontal your pocket depth each different to be possible and known one tooth root channels system anatomical structure features depends [12].

Real combined injuries periapical tissues destruction hearth coronal progressively infected periodontal pocket connected. Harrington G.V. (1979) real 3 criteria for combined EPI marked : - tooth devital to be needed - periodontal pocket must be

- periodontal pocket apical hole or side channels with contact to be necessary .

EPI classifications somewhat to many despite, they already formed of pathology only options cover takes syndrome development initial and from the clinic previous stages pulpo -periodontal and periodontal-pulp mutual effects about information . This mutual effect mechanisms learning and their systematization this heavy of pathology diagnosis, treatment and prevention get processes to optimization help will give.

1.2 STATE OF DENTAL PULP IN PATIENTS SUFFERING FROM GENERAL PERIODONTITIS

Periodontal of the disease pulp and apical to the periodontium effect present until the day not enough studied and of scientists about this thoughts opposite. With that together, tooth task of the periodontium: gum, cementum, periodontal ligaments and alveolar of the bone to the situation depend. Researchers to his opinion according to periodontal inflammation pulp inside degenerative processes provoke can be, for example, secondary dentine deposition , fibrosis, cell elements number decrease and of collagen resorption, this while when damaged pulp regeneration limits .

Periodontal in the tissues inflammation process of the teeth to the pulp indicates a significant effect: II degree common periodontitis with sick tooth pulp in 54.56% of cases back which cannot be changes defined [7].

Histomorphological studies heavy level common periodontitis as a result healthy teeth in the pulp inflammatory-dystrophic changes development proved: conjunctive tissues mucoid (56.67% of cases) and fibrinoid (10.00%) edema in the form of disorganization; of odontoblasts vacuolization (50.00% of cases); sclerosis furnaces (90.00% of cases); pulp in veins changes (63.33%) and petrification hearths (76.67% of cases); intact teeth of the pulp trophic 3 times the function decrease was determined. Cellular infiltrate of density significant ($P < 0.05$) decrease, that is including histiocytes, macrophages, lymphocytes, plasma cells pulp tissues to himself special did not happen immunity decrease shows. Comprehensive studies results trophic diseases and dystrophic changes in the background periodontal pockets and pulp microflora in the middle long term mutual effect there is when, "constant boomerang in the form of "effect". heavy common with periodontitis of patients pulp and periodontitis pathological of the process development, chronic inflammation strengthen and that's it with to provide possibility gives, periodontal of the complex protective features reduces [26]

Periodontitis with pain in patients in the pulp of change existence of the pulp electricity excitability disorder, blood flow of intensity significant decline with determined, pulp physiological age chronologically from the age significantly increased level goes [18]. Periodontal of the disease to the pulp effect assessed without, some of the authors periodontal pocket into the lateral canal or apical into the hole reached Until then, in the periodontium inflammation process in the pulp clinical effect does not show they emphasize and only this stage pathogens inflammation from the center pass It is considered possible, pulp into entering, inflammation and necrosis

cause emits [31]. So , clinical and morphological parameters according to chronic catarrhal gingivitis and periodontitis light degree with hurt in the teeth pulp from the norm difference not do indicated periodontitis average and heavy level tooth in the pulp microscopic inspections in 7% of cases inflammatory changes determines inflammation or from ischemia after a while of the pulp partially to die due to tissue loss in 100% cases observed. In periodontitis tooth in the pulp of changes a lot occurring clinical appearance is dentine hyperesthesia (80%). To the cold positive test (pulp hyperesthesia) a little occurs less often (50%), sometimes pain also have symptoms (5%). Developing periodontogenic pulpitis develops very less cases - 3%, and only a lot veined in the teeth occurs. Electrodontometry indicators increase only heavy level in periodontitis note will be done. Average and heavy with periodontitis one rooted and a lot rooted of the teeth in the pulp ultrasonic dopplerography inspection as a result linear and voluminous blood of flow two even decrease was determined. Medium and heavy level in periodontitis of phosphatidylinositols composition intact of the teeth pulp with from 1.5 times in comparison more decrease observed [. With that together, another researchers of the teeth in the pulp periodontitis light level pulp though and blood vein walls of the stroma uneven swelling and thickening, nerve of fibers hyperimpregnation , blood veins on the walls acidic mucopolysaccharides appear to be shown. of periodontitis average and heavy levels nerve of fibers again deeper dystrophic to changes met and even falling apart until leaving to go observed. Pulp cell from the elements odontoblasts layer vacuolar dystrophy and calcification note.

Pulp inside pathological process toxic of products come in to go only roots opened from the rest then, periodontal pockets harvest to be and this to the

process apical the addition of the hole as well as a result develops. Pulp aseptic necrosis cases thrombosis or small of arterioles obliteration. Dental pulp immunological, mainly in periodontitis autoimmune participation in the processes is enough Dystrophy and pulp from inflammation as a result come out tooth tissues immunological again recovery as well microorganisms and of toxins to the pulp come in to go in periodontitis possible has been teeth elimination mechanism explains [33].

Periodontitis with pain in patients tooth in the pulp surface coming morphological changes his electricity excitability indicators with is confirmed. Of the teeth electrochemistry periodontal damage level looking will change. So easy level periodontitis with electrochemistry does not change or increases by 1-2 mA . of periodontitis weight increased , the level of EOD also increases to EOD data according to , 31-60 mA between electrochemical 1.8% in teeth , periodontitis light in degree , weight and it occurs in 52% . Pulp death (EOD 100 mA and from him higher) in 0.6% of cases light in weight, heavy cases - 11.8% are observed . of periodontitis weight increased tooth of the pulp sensitivity both up and down within the limit looking will change. Pulp sensitivity borders the most sure changes severe (41%) and average weight (31.6%) observed in periodontitis [22].

Periodontal of the disease initial stage has been Doppler ultrasound in patients according to the inspection, tooth pulp veins and teeth blood in the gums of flow speed healthy periodontal disease with harm to patients up to 16.2% decreases [25].

Periodontal of tissue diseases usually of infection straight away root from the channel spreading or tooth property of inflammation root peak direction

according to development is the result and cement, periodontal I'm sorry and alveolar to the bone effect to do possible .

Healthy tooth in the pulp to inflammation take coming the reason is in the periodontal pocket tooth plaque microflora. Epithelial of compounds progressive apical shift with microflora and its metabolism products as well in the periodontium inflammation process as a result harvest has been biologically active substances canals lateral to the pulp system, apical and furcation holes and tooth dentin tubes of the root through arrived to go can, like that's it roads through infection pulp periodontium in necrosis entrance. In this case, every always root of cement inflammatory resorption furnaces is found and inflammation of the dentinal tubes road open will give. Long lifetime continued reached inflammatory periodontium texture in diseases Healthy teeth in the pulp fibrosis and dystrophic calcification, blood veins and nerve fibers number decrease observation it is possible while him infection to infect inclined does [28]. In the pulp his until necrosis has been changes periodontal treatment result to be can. So by doing, tooth plaque (stones). take to throw and later on root surface leveling with his on the surface and of cement one part to the dentin injury deliver with take to throw can. In this case, dentin tubules to the pulp of infection come in to go is the way. Root of cement to the surface injury deliver surgery interventions even during the bone there is or special curettes with leveled or tooth stones. take to be in throwing possible [12]. So, laser profilometry and microscope method with, tools using processing from given after tooth root of cement from the surface after its rough microorganism existence proved [16].

Ultrasonic scalar hard tooth tissues to the surface sonorous scalar and in

hand used metal instrument with in comparison the most harmful effect shows. With that together, healthy to the periodontium have and initial stage in periodontitis tooth of the pulp electricity sensitivity electricity scalers using done mouth cavity from professional hygiene after increases by an average of 5% [24].

Periodontal in diseases tooth root on the surface microbial plaque microorganism's lateral channels, apical holes and dentinal tubules through infection come in to go through tooth in the pulp changes cause release possible [11].

Lateral (additional) channels many normal anatomical teeth part is considered and most of the time root apical in the field and molar teeth of the roots break up field occurs. Therefore, the lateral channels exit in periodontal ligaments in places face giving inflammation reaction root peak also develops in the field. This situation is apical to the region effect to do or effect. Apical in the field and lateral canals exit points inflammation process root lateral surface across alveolar tumor peak towards spreading and even roots furcation connecting parts the system and all of them together can also harm [7].

Various in weight periodontal diseases in the background endodontic pathology 300 of them the patient check and treatment the results analysis periodontal diseases of dentine canals , lateral canals or both are also teeth surface through pulp and apical to the periodontium of influence sure patterns there is said to the conclusion came.

Periodontal of treatment itself of the pulp secondary participation take coming. Teeth of stones cleaning, curettage and flirting take throwing lateral channels or dentin tubules to open facilitate it is possible while pulp to the

disease take will come. Progressive periodontal disease pulp necrosis take coming .

of periodontitis to the pulp of influence the first result pulp degeneration of dentin some type of resorption as a result out of order or formation of reparative dentin to be determined. Pulp blood supply when broken dystrophic calcification, fibrosis, collagen resorption and inflammation increase shown. Studies that's it showed that periodontal pathology to the pulp the effect of the pulp to the periodontium relatively from the effect will appear later and less.

Chronic with periodontitis and different periodontal diseases played root in humans (intact, gingivitis, periodontitis). of the channel content learning that's it shown that it is inflammatory periodontal of diseases existence root channel periodontal pathogen microorganisms with to infect help gives , that's it with together periodontal decay level how much a lot periodontal of microflora activity so much high will be [17].

Periodontal pathogen of microflora pulp diseases and apical periodontitis etiology effect while learning, periodontal diseases development for important has been periodontal pathogen microflora pulp diseases and apical periodontitis with sick in 95.5 percent of people channel in the composition existence was determined. P. gingivalis (47.17%) is endodontic pathology of all nosological forms with the first in place stands, A. actinomycetemcomitans and Pr. Intermedia, 28.30% and 26.42% of cases suitable respectively was determined. Root channel in the composition periodontal pathogen of microflora high level spreading these microorganisms not only marginal periodontitis, but apical periodontitis also important in etiology role that he played shows .

So endodonto - periodontal injuries microbiological aspects that's it shows that the pulp and in periodontal tissues inflammation changes of microorganisms defined mutually effect ways across mutually come in to go as a result surface will come. Inflammation products and microorganisms from the pulp to the periodontium and rather, potential of transfer main methods:

dentinal tubes (deep scaffolding as a result opened remaining);

periodontal pockets;

tooth crown and root fracture;

of cement hypoplasia;

root in the structure anomaly;

furcation in the zone intermediate ridges;

fibrinosis communication;

cervical enamel projections;

cement integrity violation

The presence of a close connection between the pulp and periodontal tissues is confirmed by the microbiological similarity between infected canals and periodontal pockets. Canal infection is usually caused by various streptococci, staphylococci, rarely actinomycetes, fusobacteria and spirochetes, enterococci and other microorganisms [26].

Polymerase chain reaction detects pigment-producing bacteria in teeth with infected pulp: Porphyromonas endodoritalis, Porphyromonas intermedius, Prevotella nigrescers, Mela-ninogenica. Treponema in 34% of cases found. Periodontal pockets microbial the landscape 3 types of marker microorganisms while studying found their existence of periodontitis weight or aggressiveness. These include Actinobacillus actinomycetem

comitans, Porphyromonas gingivalis and Bacte-roides forsythus enters. They are periodontal pathogens as determined.

Periodontal pockets and root in the channels some kind of microorganism’s existence the truth one of the time in itself bacteria moved transition opportunity confirms. Bacteria and their metabolism products endodontic of genesis periapical injuries appear to be and in development participation reach and endoperiodontal of injuries in development participation reach is believed to be necessary. Among them the most important are: Actinobacillus actinomycetem comitans , Bacteroides forsythus , Fikenella corrodens , Fusobacterium nucleatum , Porphyromonas gingivalis , Prevotella intermedia, Treponema denticola , Spirochetes .

83.33% (68.1% -; - 94.2%) are heavy level common to periodontitis encountered intact of the teeth root in the channels obligation and optional anaerobic of microflora existence determined status separately problem is considered Without periodontitis in the group root in the channels microflora not found Microbiological studies that's it showed that it is intact of the teeth root in the channels 23 species located obligation and optional anaerobic in 73.91% (57.0% * 87.8%) observations of microorganisms they are periodontal in the pockets there is. in 52.17% (34.5% * 69.5%) cases of microflora qualitatively of the composition complete randomness observed microorganisms the same that's it in people periodontal pockets and root in the channels met Periodontal pockets with in comparison root in the channels periodontal pathogen of flora some of types statistics in terms of significant superiority found out that done being increased antibacterial from therapy strict, microflora vitality save remains . However Galeeva Z. (2012), periodontal pocket and root of the channel microflora quality and

quantitative composition significant to differences have that and periodontium and periapical tissues bone part destruction type as well anaerobiosis conditions with dependence showed that based on the author in EPIs of infection turbulent the way main spread the way that emphasizes [22].

Periodontitis with sick teeth in the pulp difference of changes widely spread despite, they almost without symptoms will pass to them most of the time diagnosis will not be placed and modern level in dentists is not treated. Pulp of the situation periodontitis disease to the weight dependence about data not found Periodontitis in treatment anatomical and topographical location account received without vital teeth to the pulp possible has been effect account not taken. Above of the said all of them of the problem relevance shows and this in the field addition studies transfer necessity determines

1.3 MODERN CONCEPTS ON THE ETIOPATHOGENESIS OF ENDODONTO-PERIODONTAL INJURIES

Last one how many year inside dental in publications endodontic and periodontal of injuries mutually depending on their pathological of the process to the weight mutually effect showing data appear be started Combined endodontic-periodontal of injuries wide spread, their manifestation of being different forms and a person life of quality to decrease takes coming heavy consequences this the problem not only medical, perhaps social to the degree brought and this pathology own on time diagnosis and efficient treatment necessity means.

These diseases between relationships the first time by Simring, Goldberg (1964)Described. That's it from time since endodonto -periodontal lesions (EPI) term in the periodontium, tooth the pulp is also different level

inflammation processes to be determined when starting in the literature widely applied started In 17.78 % of patients each different kind of endodont - periodontal lesions (EPI) were identified , in 50% of cases this case teeth take to throw came [19]. 35-44 years old of the teeth apical chronic periodontitis diagnosis placed endo-periodontal in patients changes in 76.7% of cases in description light, average at 16.7% and in 6.7% of cases severe periodontitis was determined. Endo-periodontal of changes three options detected: the first (83%) periodontitis and periodontitis symptoms showed, but diseases to each other effect without doing independent respectively continue, the second (7%) - periodontitis and periodontitis signs almost one of time in itself appear was , the third (10%) periodontal and periodontium changes appear independently respectively but of complications development and appear to be with each other forming a single hearth the passing of aggravated.

And today in the day periodontitis and of periodontitis clinical their appearance mutually dependence , endodonto -periodontal of changes ratio about opposite data available .

Relationships between pulp and periodontium embryological, anatomical and functional in terms of mutual similarity with is determined. Pulp and periodontium mesenchymal to the character have cells tooth appear to be during tooth pacifier and tooth of the bag appear to be with will increase, they turn with pulp and periodontium parts forms. Tooth histogenesis in the process they are epithelium tissue growth because of from each other separate starts Tooth production in being there is has been these tissues between anatomical connections tooth whole life during preserved remains. Hertvigovsky sheath increase with pulp and periodontium between main

contact the way being stay apical hole harvest will be Of the teeth development in the process pulp and periodontium between dependence addition and lateral canals in the form of preserved remains. This pulp-periodontal connections will be done below in more detail. Pulp and periodontium in the middle contact ways that it was because of, a lot of cases pathological processes connected with each other, endodontic -periodontal or periodontal-endodontic injuries appear to be taken will come. These injuries have different pathogenesis and clinical properties. These diseases have knowledge about which treatment is very important [21].

Embryo, anatomical and functional to the common have been, to the tooth directly next door has been tissues (periodontium, tooth bone, bone, alveolar a tumor) is called a periodontium. Endodontic is tissues complex to be , to include tooth in the void is located pulp and root channels system , apical periodontium cement , cortical plate and tooth root peak wrapping standing pore substances enters. Apparently the last in years in dentistry development mechanism and this combined pathology of treatment to himself special features learning independent department - endodontology and periodontology appear that it was for nothing [29].

Endodonto - periodontal injuries are in the periodontium inflammation and destructive changes with passing endodontic and periodontium tissue damage. Otherwise by doing so to speak, pulp or his surrounding microbe of inflammation development in the process surface coming to processes endodonto -periodontal injuries is called. Usually tooth-jaw segment in the area of periodontitis and of caries complications (pulpit and periodontitis) combination determination for in the literature " endodonto -periodontal injury" (EPI) term is used. [17]

So, endodontic -periodontal syndrome is pulpitis (periodontitis) and periodontitis mutually depends has been one how many signs to itself special combination, pathogenetic unit with combined symptoms is a set . Apparently, between periodontitis and endodontic mutually effect system violation this of the syndrome the most important pathogenetic from the features one being, in this organism pathological hearth (inflammation) periodontium and in endodontics independently respectively cannot eliminate [24]

To the problem dedicated literature analysis to do united pathology development etiopathogenetic ways physiological (dentinal tubules, apical hole) and physiological non (iatrogenic root of the channel perforation, lateral condensation and endodontic treatment because of tooth at the root cracks and fractures) to be possible gave .

This of the development of EPI in the review etiopathogenetic mechanisms about modern ideas tried to systematize.

Undoubtedly, morphological and functional relations between endodontic and periodontium EPI development diagnosis and in mechanisms superior stands: this about pulp situation and his periodontium I'm sorry and alveolar to the bone effects, as well as periodontal of tissues situation and their tooth to the pulp influence as well conductivity account get need, teeth the pulp periodontium with mutually tie up methods: apical hole, lateral canals, dentine tubes (tubules). A lot numerous lateral canals exist because of endodonto -periodontal injuries more molar in the teeth occurs [33].

To the periodontium **pulp of pathology to the effect** separately attention is directed. Healthy alive pulp periodontal to tissues does not show negative effect. Pulp inflammation as well as his necrosis tooth career, surgery

interventions, trauma, chemical and strong thermal scratching feature from the effect come comes out Inflammation due to local swelling will be and As a result intrapulpal of pressure increase cells to his death take will come. He was released chemical mediators of swelling. Intrapulpal of pressure increase because of toxin substances apical hole, lateral and addition channels and dentinal tubules such as there is has been opened from channels pass can, as a result retrograde periodontitis appear will be Endo-periodontal injuries most of the time apical hole around, less addition and lateral canals around occurs and intact dentinal tubules around almost does not occur [48].

Pulp peripheral, central layer and tooth root dentin wall change zones between topographical Proportion is fatal of changes weight and of depth inflammation on time straight away dependence and of the patient to his age reverse proportional dependence proved. Electronic microscopic and microbiological studies information analysis to do basis during the pulpit root in the dentin constant odontogenic infection of their hearths appear of being before unknown event it was determined that his essence of dentin cracks and broken in places organic substrate and of microflora accumulation, demineralization zones, carvings and microcavities periodontal disease, its chronic direction supports. During the pulpitis of inflammation from the pulp to the periodontium spreading not only apical hole and additional lateral channels through, perhaps tooth pulp inflammation in the background chemical, biological, physical and mechanical factors under the influence of tooth root and dentinal tubules of the walls change also happened with will be [41].

Dental cement endoperiodontal infection furnaces as a result of resorption of the process activity received new data Bone in the tissue destruction of the process activity and tooth of cement resorption in the middle correlative correlation (r = 0.74) was established. Microbiological and pathomorphological studies based on the author of infection tubular the way endoperiodontal of injuries in pathomorphogenesis main joint and endoperiodontal of injuries frequency direct lateral canals to existence depends said to the conclusion came In this case, the tooth root of cement lacunar resorption, periodontal in tissues inflammation and destructive of changes weight and anaerobic of microflora superiority endoperiodontal of injuries increase prognostic in terms of importance is a factor [19].

So pulp and in the periodontium inflammation processes one different infectious to the feature have Theirs difference between that is, in periodontal diseases bacteria dentinogingival collected in the field, endodontic damages while bacterial of elements nature looking develops [9].

Periodontal diseases endodontic effect of treatment pulp pathology of periodontal diseases effect directly with depends. Endodontic of treatment efficiency enough degree selected treatment measures depend Modern in literature endodontic of treatment successful long term forecast internal and from the root except factors with depend. Root inside to factors endodontic of anatomy complexity , complexity , root channels in the system of microflora diversity , its stability and to the biofilm organization ability includes .

From the root except reasons extraradicular infection, "real" cysts, periodontal of injuries existence, root resorption, periapical of tissues a

stranger to the body reaction (endogenous or exogenous) and iatrogenic factors (sharpening from the process come emerging, root ticks irrigation) , used of drugs toxic characteristics enters [23].

Shown etiological factors one how many most of the time in the periodontium inflammation of the process development takes place [22].

Conservative cure failure still contagious of the process to be considered development recommendation will be done. Microflora diversity bacterial DNA isolation, PCR diagnosis with is confirmed. Their associations, primary and repeated endodontic treatment as a result of qualitative differences, pathogen did not happen of microorganisms main channels in the apical delta zone spread out of biofilms pathogen of microflora growth factors, synthesis and disintegration through root in the channels infection sia save stand up ability was determined. [45].

Sealed root channels periodontal destruction in the area of the root of filling poor quality as a result comes out, of the channel not filled in places while bacterial flora grows up to the periodontium spreads. Dental cavity bottom demineralization, micro cracks and perforations, consistency to decrease takes comes [18].

Last EPI pathogenesis in learning united of pathology deepening to go big attention is being given. Various authors emphasize this unity of mechanisms.

Immunity in the system significant changes are also observed can T-cell of immunity connection activities weakening B-lymphocyte activation there are also cases. Immunity in the system proliferative in processes growth not observed, although T-cell of immunity of connection potential possibilities preserved although it remains [14].

Endodontic come exit and periodontitis periapical similar in injuries pathogenetic mechanisms to work are dropped, they bacterial inflammation, immunity cells system and osteolysis with depend Endodontic injuries tooth of the pulp bacterial damage, his inflammation and necrosis, periapical in the region of inflammation development, periapical bone resorption and granuloma or tumor formation with depend In periodontitis in the gingival sulcus and tooth on the plaque bacterial biofilms gingival inflammation and periodontal pockets harvest to be with bone resorption take will come. So , two of the disease pathogenesis bone resorption, osteoclasts number increase and their soft tissue bacterial from inflammation after activation with depends common properties .

Periodontal diseases in the background surface coming periodontal diseases in pathogenesis immunological and metabolic diseases with one in line blood vein factor main of the factors one is recognized as, because microcirculation system of the disease initial stages of tissues pathological in reactions participates.

By Sorokina take went studies that's it showed that EPI is pathognomonic to the feature have not (only this disease signs for characteristic), it is endodontic and periodontal of injuries signs combined without clinical in appearance very a lot manifestation will be Primary damage from the center , clinical , morphological and X-ray from changes strictly Look , it's enough therapeutic cure did not happen in the case of pathological process on paper like a greasy stain spreads and As a result covering both endodontic and periodontal takes [34].

Summary

Modern of dentistry current problems in line pulpo -periodontal complex diseases separately attention is worthy. On this issue modern in the literature this inflammation of pathology different aspects emphasized. With that together, literature in sources of the disease clinical appearance different options, diagnosis methods, pathomorphological manifestations, pathogenetic mechanisms and pulp, periodontium and periodontium pathological to the process attraction to do methods determined. Etiology and pathogenesis issues are given light up, microbe to pathogens separately given attention, this pathology contagious feature is emphasized.

Pulp, tooth hard tissues and periodontal pathology development with tooth of the root in cement ultrastructural changes about data there is.

Pulp, periodontium and periodontium pathological to the process attraction of doing offer done methods given. Periodontics inflammation to the process attraction of doing possible has been methods analysis when doing, pulp - periodontal and periodontal-pulp ways across of infection spreading possible is emphasized. In this case infection interpenetration to do methods are: dentinal tubules (deep scale with affected); tooth root of dentin change; periodontal pockets; tooth crown and root fracture; of cement hypoplasia; root in the structure anomaly; furcation in the zone intermediate ridges; fibrinosis communication; of enamel cervical projections; cement integrity violation.

Infected tooth channel and in the periodontal pocket microbiological similarity pulp and periodontium tissues in the middle steady contact that there is confirmed.

With that together, we have there has been in the literature periodontal to diseases played in patients EPI clinical appearance and weight about common periodontitis to the weight relatively data there is it's not. This combined pathology enhancer metabolic of mechanisms role unspecified, of the syndrome pathogenesis and forecast systematic and local immuno-metabolic contribution of diseases not defined. These issues solution to do of the disease development and of the forecast the most important mechanisms determines.

1.4 MODERN TREATMENT METHODS OF ENDODONTO-PERIODONTAL INJURIES.

Marginal and apical periodontium of the periodontium anatomofunctional endoperiodontal of complexes systematic elements is considered Because of this, it is contagious substances and inflammation of products vein and tubular the way with from the periodontium to endodontic pass and vice versa this of organs the disease complicated pathomorphological-functional endodonto -periodontal converts to a complex (EPI), while dentoalveolar of the system this pathology complex requires treatment. [6].

Together take to go endodontic and periodontal pathology in treatment problems, teeth recovery, patients prosthesis, with EPI therapeutic manipulation algorithm not only patients, perhaps each how the work in the profile dentists is also relevant.

This pathology to treatment dedicated many to work despite, with EPI hurt patients right diagnosis inspection transfer and from him next of treatment difficulty because of the most difficult from categories one is a tooth of extraction wide spread out reason .

These patients in the group of treatment generally explain low efficiency.

Current at the time this combined pathology for very a lot in quantity different different treatment schemes offer done There is information systematization three main direction to determine possibility will give:

1. Root channels system and periodontium antibacterial drugs and antiseptics with sanitation to do
2. Tooth circumference tissue fatal damage restoration: periodontal and periodontal;
3. Endodontic and periodontium pathological cases one at the time complex treatment [13].

EPI efficient treatment, first in turn, microbial factor root channels from the system and periodontal out of pocket out to throw, then possible if so, your tooth support structures restore own into takes In treatment actions not only microbial factor to suppress, maybe local protection mechanisms to activate and periodontal to regeneration directed to be needed [28].

Current at the time this combined pathology treatment according to one how many thoughts there is. Some of the authors primary endodontic to treatment without words priorities they give, periodontal treatment endodontic measures ineffectiveness sure from being only done later is increased; others one of the time in itself both the disease treatment considered necessary - endodontics and periodontal disease. Anyway, the root channels system complete disinfection and from obturation after success to treatment reach possible emphasized [52].

This attitude with endodonto -periodontal syndrome of treatment very a lot numerous endodontic methods offer done being their each one's advantages and individual shortcomings there is.

Pulp-periodontal injuries with teeth endodontic treatment apical periodontitis with teeth treatment for main requirements according to done is increased. This is the root channels of preparation efficient methods compliance to do necessity, as well damaged parietal dentin take to throw and root channels good quality to fill and them disinfection tools and methods search necessity requirement is enough.

Treatment of EPI forecast each one damage independent respectively to existence or joint damage as that it was found depend In any case, treatment the pain loss and infection eliminate to do directed fast measures own into takes Hard painful If there is acute pulpitis, it is urgent measures pulpotomy and periodontitis because of pain if there is pain leaver from tools use need Primary endodontic in injuries to infection against struggle basically penicillin and erythromycin such as from antibiotics to use own into takes and periodontal of the disease main in injuries periodontal pathogen to microorganisms against antimicrobial preparations applied is displayed.

Photodynamic therapy and ozonated physiological of the solution sure to microbes against effect on periodontal diseases as well played in patients these methods root of the channel microflora together of application proved high clinical efficiency [29].

Strong endoperiodontal to the syndrome played patients Step-Back technique in treatment using channels preparation primers, K-files, headstreams with done is increased. Endoperiodontal syndrome to treat such approach edge in the periodontium destructive of processes to stop, teeth mobility to decrease and As a result their to be kept help gives.

Same that's it the author endoperiodontal syndrome complex treatment stage as root the hill resection to do offer did . GP's heavy level aggravation level

prevention to do for, of the teeth depulpation recommendation , that's it while aggravation prevention to get and treatment quality to increase take comes [7]. The alternative of endodontic treatment is root resection and depulpation. Primary endodontic injuries treatment is also extensive comprehensive to be and root canals treatment periodontal injuries treatment with one at the time done increase need emphasized.

Periodontitis endodontic-periodontal pathology has been in patients treatment common acceptance done approaches according to done is increased and periodontal of pathology weight and individual characteristics of the patient account received without applied hygienic, therapeutic, surgical and orthopedic treatment.

Local antibiotics are widely used: tetracycline, doxycycline, minocycline, they are in gingival fluid drug concentration save stand up for different forms used [39].

Recommendation done treatment mode damage development reason factors and pulp vitality takes into account: default endodontic damage and to life invalid pulp if so, endodontic treatment acceptance will be done; periodontium and to live valid of the pulp primary injuries if - periodontal treatment, combined injuries and to live invalid pulp with periodontal treatment and after endodontic treatment preferably [12].

Periodontal your pocket deepening increased in case periodontal injury if so, him surgery treatment necessary If the tooth surgery to treatment answer if not, it is necrotic pulp that there is doubt there is and this without endodontic intervention is shown.

Bone plate and of tissues purposeful regeneration using damaged tooth of the situation forecast improve it is possible while periodontal of structures

provides recovery [13]. Endo-periodontal injuries in the treatment regenerative approach tricalcium phosphate transplant, platelet-rich plasma, bioabsorbable collagen and polymer of membranes to use themselves into takes and calcium hydroxide cellulosic bone matrix formation for basis being service does . Bone formation **encourage for biological active bottle feature** him development with treatment for bone of the transplant place clicker tool as to use for basis became. Endodonto -periodontal injuries treated with soft laser diodes are more efficient and less damaged than traditional surgical methods .

Research the results analysis to do, Dalatsin daughter-in-law apply with the pulpit periodontal diseases with together treatment efficiency significant level to increase possibility gave, while this technique wide dental in practice recommendation to do possibility will give [21].

Current at the time endodonto -periodontal injuries efficient treatment one of time in itself microbial factor root channels system and periodontal out of pocket out to throw , then possible if , dentoalveolar in the system tooth work forecast depends has been the bone supportive structures restore mean holding point of view look more and more wide is spreading.

In treatment actions not only microbial factor to suppress, maybe periodontal tissues protection to do and restore local mechanisms to activate directed to be needed [33]. Endo-periodontal changes have been patients treatment complex requires an approach .

So, Malanyin IV combined endodontic injuries if so, endodontic and periodontal treatment necessity emphasizing passed. If endodontic treatment enough if , forecast periodontal of the disease to the weight and periodontal treatment efficiency depend If only endodontic treatment done

if increased , the defect partially and temporarily restore waiting can Endodontic pathology treatment for the author cefazolin sodium , Viferon and From dexamethasone in a ratio of 1:1:0.1 used of periodontium apical hole outside - Viferon , Metrogil Denta , Heparin and Ozonide from the oil used.

On a radiograph endodontic, surgical methods and tooth bottom in the partial dentine "BV" drug with remineralization to do through furcation defects with passing periodontal - periodontal injuries treatment algorithm work developed [22].

in EPI of microflora aggressive nature not only complete antibacterial influence, perhaps periodontal of tissues update local protection mechanisms activator tools with also requires provision. In this case, the most acceptable choice is antibacterial and immunocorrective properties have medical use of ozone.

This category of patients of treatment complex schemes membranotropic antiseptic " Iodmetroxide ". own into take need To him included bactericidal drugs (iodine, dimexide , metronidazole). of influence efficiency their synergy with of components separate effects from the total increases. Root channels recovery and periodontitis treatment to use " iodmetroxide ". showed high clinical efficiency [24].

New techniques, methods and achievements in the treatment of inflammation of the pulp-periodontal complex are associated with the use of instruments for canal microsurgery with the possibility of selecting a sufficient amount of drugs and introducing them into the periodontal tissue. Macro- and microtubules microflora effect to do for antibacterial drugs, enzymes (0.02% chlorhexidine, 1% iodinol solution, trypsin, chymotrypsin)

are used. Chronic periodontitis treatment 1 time, acute and aggravated periodontitis and in the 2-3-4 session done is increased. Local therapy with one in line common thing also depends: general intoxication events with desensitization tools prescribed (dimedrol , tavegil).

United pulpo -periodontal injuries with mucoalveolar to the bone enter new methods to find or improvement need. With that together, alveolar of the bone endodontic access and of trepanation combination development bone tissue recovery and periodontal of the complex next activities provide for periapical destructive to processes direct effect of showing main and promising direction is considered [26].

Pain level reduction, swelling of being prevention get and from treatment after more convenient the time provide for recipes to the complex without steroids to inflammation against drug. Ketorol from intervention after 2 times a day (each one 10 mg) is included.

In periodontium blood supply improving and broken metabolism restorer from tools efficient use, for example, a cell of metabolism activator - Solcoseryl ® preparation dental adhesive paste wide is used.

We recommend drug treatment of large affected foci with active aspiration-compressive sanitation, which reduces the pain of manipulation, the risk of microbial contamination of adjacent tissues, which increases the effectiveness of therapy. The high clinical efficiency of calcium phosphate ceramic preparations, together with antibacterial agents for resporative therapy of periapical tissue defects and furcation zone, is reinforced with large granules with low bioavailability, which increases the effectiveness of therapy and reduces the frequency of interventions due to conductive properties.

However, successful treatment was achieved after complete disinfection and obturation of the root canal system [47]. Other authors also emphasize the need to take into account the sequence of manipulations when planning Scaling & Root Planing procedures on the root surface of a tooth with an endoperiodontal focus of infection - first of all, the root canal system should be sanitized, then periodontal instrumental treatment should be continued. If the following X-ray signs are detected: bone destruction in the vertical direction (more than 5 mm deep), granulation / granulomatous periodontitis, periodontal and periapical bones with a tendency to combine destruction centers, surgical removal of the infection center (extraction of a tooth) becomes necessary.

Summary

The analysis of the literature of recent years shows the great interest of researchers in the problem of treatment of combined lesions of the pulp, endodont and periodontium.

Taking into account the chronic course of combined damage, the recommended methods and treatment schemes, first of all, provide pathogenetically adapted treatment with the introduction of drugs with antibacterial action; it also requires the use of methods and tools that initiate periapical regeneration, increase hardness of furcation defects and dentin, and optimize bone regeneration in the defect zone. Attempts are being made to influence endoperiodontal complex tissues with drugs that restore immuno-metabolic processes and microcirculation, as well as have a corrective effect on the processes of change and damage and stimulate regenerative potential. Effective treatment of EPI is primarily related to the

elimination of the microbial factor from the root canal system and periodontium, and consists in restoring the pocket and, if possible, the supporting structures of the tooth. The basis for local treatment of periodontitis is the elimination of local risk factors for the development of the disease, among which the removal of biofilm, mineralized dental deposits of the upper and lower gums takes the leading place. The reason for this is that the periodontopathogens of this biofilm and mineralized dental deposits are the main reason not only for the development, but also for maintaining the inflammatory and destructive process in the periodontium, periodontium and pulp tissue. In patients with endodontic-periodontal injuries, it is especially important to use minimally invasive and atraumatic methods of periodontal complex tissues. In connection with the development of minimally invasive treatment methods, the introduction of new drugs and the development of diagnostic methods, a large number of combined injuries (pulp and periodontal, periodontal and periodontal) that were previously considered hopeless to save the tooth and the function of the dental prosthesis are now becoming a research topic.

Part 2. RESEARCH MATERIALS AND METHODS.

Scientific studies the following directions own into received :

1. EPI Uzbekistan in the Republic spreading learning and EPI cause emits factors determination;

With EPI to the sick dental help show situation an expert assessment;

3. EPI early diagnosis, prevention and treatment according to methodical approaches justification:

3.1. Caries to the stage and periodontitis to the weight looking vital teeth of the pulp functional situation study

3.2. of periodontitis weight and tooth career stage effect level and their vital teeth of the pulp functional to the situation mutually effect dispersive analysis to do

3.3. Periodontitis in treatment pulp damage prevention get according to medical tactics justification

4. Clinical and X-ray of parameters immunological disorders with mutual dependence and periodontium and of the periodontium difference in pathologies microcirculation status and clinical diagnosis Generate EPI based on the set EPI of being pathogenetic mechanisms study:

5. Treatment of EPI new method work exit and justification

Materials and research of group characteristics

EPI Uzbekistan in the Republic spreading Tashkent state while studying dentistry at the institute to treat appeal 326 people who did the patient and Samarkand state medicine at the institute endodonto -periodontal injuries with 195 patients the patient in detail clinical from inspection was

conducted. Periodontal diseases for - 195 (58.89 ± 2.72%) and 135 (41.18 ± 2.72%) endodontic diseases for 18-55 years old.

Patients age and sex its composition is presented in table 2.1.

Table 2.1.1

Dentist - to therapists to treat appeal did of patients age and sex composition

age years	Endodontist diseases because of			Periodontitis diseases because of			Total		
	E	A	total	E	A	total	E	A	total
18 -25	11	16	27	7	9	16	18	25	43
26-34	14	18	32	9	13	22	23	31	54
35-44	24	38	62	20	31	51	44	69	113
45-54	20	34	54	10	22	32	30	56	86
55	9	11	20	4	6	10	13	17	30
Total	78	117	195	50	81	131	128	198	326

Periodontitis with pain in patients EPI high spreading was determined.

EPI was to patients dental help show situation an expert evaluation for an expert evaluation method used. Inspection to the results random of factors effect neutralization 3 experts for group, that's it including each one 10 specialists from the region participated.

Main problems an expert criteria in the form of was formed, systematized and present done All selected formalized problems 4 main the list organized did :

1. EPI statistics account;

2. Diagnosis of EPI and clinical aspects of treatment;

3. Personnel preparation;

4. Specialized the group organize to achieve

Territorial of differences experts to his opinion effect an exception to do for of experts thoughts calibrated; of differences reliability not established ($p < 0.005$).

Table 2.1.2

Caries stage and periodontitis weight pulp functional to the situation effect in learning of the teeth anatomical and topographical status

Diagnosis of periodontitis	Caries	Localization				
		tooth edges and tooth dogs	premolars	molars	Total	
N torture group, n=10	Intact condition	15	10	11	36	86
	in the spot stage , superficial	6	6	8	20	
	medium	4	4	6	14	
	deep	5	5	6	16	
PMP n=10	Intact condition	15	10	10	35	81
	in the spot stage , superficial	5	6	7	18	

	medium	3	9	5	12	
	deep	5	5	6	16	
PMP n=1 2	Intact condition	17	12	13	42	102
	in the spot stage , superficial	6	5	7	18	
	medium	8	5	6	19	
	deep	9	6	8	23	
PSP n=1 2	Intact condition	16	11	14	41	105
	in the spot stage , superficial	8	7	7	22	
	medium	7	5	8	20	
	deep	8	6	8	22	
Total :		137	107	130	374	

To the stage of caries and periodontitis to the weight looking, vital teeth of the pulp functional situation with PIP in learning 10 infected patients attended; 12 - with PMP 12 - with PSP. Sex and age 10 comparable people control the group organized did

Research during with caries injuries stage account received: 1 - intact tooth 2 - at the spot stage caries, superficial; 3 - medium and 4 deep caries.

Your tooth anatomical and topographical localization with one in line: 1. tooth edges and tooth canines, 2. premolar and 3. molar teeth (Table 2.1.2). It can be seen from table 2.1.2 apparently intact with periodontium 86 teeth in patients, 81 with PIP, 102 with PMP and 105 teeth with PSP checked. A total of 374 teeth checked.

Vital teeth of the pulp functional status pulp electricity excitability (PEE) and its microcirculation - microcirculation indicator (MI) size with was evaluated.

Vital teeth of the pulp functional situation learning of research next stage - endodonto -periodontal of injuries initial stages pulp damage mechanisms to learn done to increase possibility gave.

This purpose periodontitis weight and caries stage vital teeth of the pulp functional to the situation effect level according to scattered analysis was determined.

Caries and periodontal of diseases pulp functional to the situation effect descriptive parameter of the pulp electro- odontometric parameters was

Dispersion analysis in doing being studied of factors the following degrees account received:

Periodontal diseases for: Level 1 - PIP; Level 2 - PMP and Level 3 - PSP.

Dental caries for: 1 level intact tooth Level 2 - in the spot stage caries, superficial; Level 3 - medium caries and 4 level - deep caries.

Studies with PIP in 10 affected patients held; 12 - PMP; 12 - PSP. **PEE** is different to groups belonging to in the teeth was measured. A total of 288 teeth were checked (Table 2.1.3).

Table 2.1.3

Periodontitis in patients dispersion analysis to do during vital pulp with of the teeth spreading

Diagnosis	Patients with periodontitis											
	PIP , n=10				PMP , n=1 2				PSP , n=1 2			
Localization	1	2	3	4	1	2	3	4	1	2	3	4

Intact teeth	10	5	10	10	11	6	12	13	12	4	11	2
stain stage caries, superficial	3	2	6	7	4	2	5	7	5	3	7	7
medium caries	2	1	4	5	5	3	5	6	5	2	5	8
deep caries	3	2	5	6	6	3	6	8	6	2	6	8
Total :	18	10	25	28	26	14	28	34	28	11	29	37
TOTAL : 288												

Note: 1 - tooth edges; 2 - tooth dogs; 3 - premolars; 4 - molars.

Periodontitis treatment during pulp damage prevention get in order to medical tactics justification for periodontitis from treatment after vital teeth of the pulp functional situation comparative studies were conducted.

Studies in 2 groups of patients held :

1. Periodontitis traditional treatment;
2. "Vector" apparatus for periodontitis with treatment

Caries and the tooth localization to do stage pulp functional status indicators effect an exception to do for different different tooth groups (tooth edges and tooth canine, premolars and molars) intact to the teeth, in the stain stage caries and superficial, medium and deep to caries, with PIP hurt in patients studies were conducted. terms - from treatment before treatment after and 1 month after treatment (Table 2.1.5).

Table 2.1.5

General periodontitis of treatment different different methods vital teeth of the pulp functional to the situation effect comparative in learning of the teeth anatomical and topographical spreading

Caries	Traditional treatment				"Vector" apparatus with treatment			
	Cutting and pile teeth	premolar	molars	Total	Cutting and pile teeth	premolar	molars	Total
Intact periodontium , n=10								
Intact teeth	15	10	11	36	15	10	11	36
stain stage caries, superficial	6	6	8	20	6	6	8	20
medium caries	4	4	6	14	4	4	6	14
deep caries	5	5	6	6	5	5	6	6
PIP , n=1 1								
Intact teeth	15	10	10	35	14	11	9	34

stain stage caries, superficial	5	6	7	18	4	8	6	18
medium caries	3	9	5	17	4	8	6	18
deep Kari y es	5	5	6	16	5	5	6	16
PMP , n=12								
Intact teeth	17	12	13	42	16	13	11	40
Superficial caries	6	5	7	18	5	6	6	17
medium caries	8	5	6	19	7	4	4	15
deep caries	9	6	8	23	8	5	6	19
PSP , n=12								
	16	11	14	41	15	12	14	41
Superficial caries	8	7	7	22	9	8	8	25
medium caries	7	5	8	20	7	4	7	18
deep caries	8	6	8	22	7	7	8	22

Total :	137	107	130	379				284

EPI of being pathogenetic mechanisms treatment for immunological, biochemical, microbiological indicators and periodontal and periodontal of diseases different in pathologies microcirculation status and clinical diagnosis placed EPIs was studied.

for this 3 groups of patients was built :

Group 1 - apical periodontitis with clinical diagnosis placed 60 patients;

Group 2 - I-II severity common periodontitis in the background chronic apical periodontitis with 62 sick patients;

Group 3 - endodontic-periodontal injuries 75 patients with

Comparison of groups age and sex its content is presented in table 2.1.6.

2.1.6. - table

Group	Total	Sex		duration years of the disease	pathology
		M	W		
1 – chronic apical periodontitis	60	24	36	>2 years	2
2 - chronic apical periodontitis + periodontitis	62	26	36	>3 years	2
3 – endodontic - periodontal injuries	75	32	43	>4 years	3
Control	20	8	12	-	2

To research included of patients groups gender, age, periodontal of the disease weight according to one was different. Patients average age 43.6 ± 2.11 years organize done, that's it including 90 men and 127 women, this of women to health care that they do and often appeal to the dentist that they do shows.

In phase 5 of the study, EPI treatment new method work exit and in justification, in treatment was EPI only 75 patients participation did, treatment style look, young and gender composition and background somatic of pathology frequency according to into 3 comparable groups divided periodontal in group 1 (25 people) and group 2 (26 people). to treatment present in the day acceptance done:

Teeth internal from the wall and your pocket bottom from the part possible has been granulations scratch throw away, biological active medication into the gingival pocket input and to the computer medical dress up such as applied to:

Group 1 - protection and fasten bandage under Metrogil-denta oil rub

Group 2 - ozonated physiological of the solution damaged tooth in the field transition to period cells;With that together, periodontal in group 3 treatment only "Vector" hardware with the root from treatment consists of was

Compared groups sex and age, trigger tooth endodontic damage location and diagnosis according to random. Endodontic treatment we developed came out and described in clause 2.3.1 to the algorithm according to done increased.

2.1 CLINICAL RESEARCH METHODS

Anamnesis in collection of the disease duration, aggravation character, toxic of effects the presence of the disease clinical appearances and treatment to the results attention given.

Research from the beginning before all patients in research participation reach for optional information contract signed.

In research common periodontitis, apical periodontitis with aged 18-54 years old male and a woman participation did

Patients from research exclusion criteria: dentoalveolar anomalies and of the teeth deformations, pathological decay, orthodontic of means presence is contagious diseases, severe somatic pathology and cytostatic drugs acceptance do, endocrine pathology (diabetes, thyrotoxicosis), pregnancy, breastfeeding, chronic of diseases increase and others, of the patient's refusal to participate in studies.

The patient clinical inspection during life and disease anamnesis, previous medical documents and clinical and X-ray data analysis done.

Personal hygiene level evaluated with Green-Vermillion (OHI-S) method (Simplex Oral Hygiene Index); > Periodontal of pathology developed forms 2 years in detection during index used (PI, Russell AL, 1956). Gingival inflammation level periodontal-marginal-alveolar with index (PMA, Parma, 1960). was evaluated.

Periodontal of diseases diagnosis periodontal of diseases classification criteria according to clinical and X-ray studies based on done increased

Endodontic treatment indicators objectivity and healer tooth in the field EPI in treatment periodontium situation confirmation for of the jaw opposite on

the side reason and intact tooth in the field periodontal of tissues local situation comparative evaluation was conducted.

Periodontal tissue local situation evaluation for indices from the system used: Loe & Silness of property index, 1963; papillae blood leave indicator Salex & Mullermann , 1975; Silness & Loe plaque index, 1964.

So so with EPI sick to patients dental help show situation evaluation him improvement according to Suggestions work exit for an expert evaluation method using done increased

3 experts in research group, that's it including each one out of 10 people from the area expert participation did

Later on an expert groups suitable 1, 2 and 3 respectively.

different areas an expert grades of transfer to the goal compatibility research to the results random of factors effect equalization for them later on comparison opportunity with depends was

Initial stage of experts initial interviews through to the system given and special research to the manual included an expert criteria in the form of present done main problems was formed.

Specialists each one the problem in evaluation, current at the time him solution to do point of view in terms of How primary and priority as well each one to the problem solution to the system how contribution from adding come they came out Evaluation is 10 points in the system done increased

All selected and formalized problems are 4 main the list organized did :

1. EPI statistics account;
2. Diagnosis of EPI and clinical aspects of treatment;
3. Personnel preparation;

4. Organize specialized dental help to achieve

Research from the beginning before we each one separately problem according to experts in the price of differences reliability by learning we went out This methodical approach territorial of differences an expert to the conclusion effect determination for used of indicators big part for statistics in terms of differences not detected (P> 0.05).

Selected issues from grouping then, arithmetic average values, mean errors and standard defects counting it's out the conclusion to generalize possibility gave, that is, systematic whole evaluation for their degrees combine

Each in the group defects of the group average arithmetic from the values calculated , and then to the sigma defect becomes Collection only "±" signs with proportions with done increased because in studies importance " from the big "small "principle based on counting developed

These are sigma defects from being transferred after high statistics sensitivity have been single measure to coefficients to give possibility gave Later, this problem in the group importance for weight category as sigma defects sum (∑d s s) is obtained. ∑d s depending on the problem known degree given.

Transferred studies based on the diagnosis of EPI and treatment to quality the biggest effect showing main problems was determined.

Transferred studies results this tooth pathology treatment efficiency and convenience increase according to scientific based on suggestions work exit for basis being service.

2.2 COMPLEX TREATMENT ALGORITHM OF ENDODONTO-PERIODONTAL INJURIES USING MEDICAL OZONE AND VECTOR THERAPY.

Treatment of EPI modern principles one of time in itself endodontic and periodontal treatment offer does

Endodontic treatment

Endodontic treatment Infectious periodontitis treatment current problem being remains because of the dentinal tubes and tooth from the deltoid branches of the roots infection eliminate to do problem solution not done A lot numerous deltaic branches and root dentine microtubules network modern endodontic treatment methods with achieved which cannot be microorganisms is a warehouse. Microbes constant presence odontogenic of infection chronic periapical furnaces harvest to be taken comes [7].

So , infectious EPI treatment dentin and in the periodontium infection no to do directed if, the most efficient is considered Periodontitis complex treatment and prevention in getting tooth root dentine treatment and of treatment physiotherapeutic methods, that's it including medicine of substances intracanal electrophoresis widely used.

of electrophoresis essence dentin and in the periodontium microorganisms activity reducing intoxication reducing inflammation process which stops and pathological in the hearth area of tissues reparative processes activator is impressive. Also medicinal of ions together effect and straight away of flow heat effect combine important. Through the channel medicine substances of ions straight away pathological to the oven come in to galvanic of current peripheral nerve, to the ends to inflammation against effect with together therapeutic and reflex to the effect .

Anode to channel active electrode as is included; tissue of liquid electricity dissociation during on the channel ozone and oxygen harvest will be Actually, it is method tooth root and periapical of tissues dentine for ozone of therapy one type

1st visit

Anesthesia and cofferdam from installed then we are one how many consecutively from stages consists of has been endodontic to treatment we passed :

1. Of the tooth infected hard tissues cutting and taking to throw and pulp to his camera access formation;

2. Pulp camera to open and expand;

3. To the root canal access part and its height from three one expanding, funnel-shaped form Create;

4. Pulp extractor using root the pulp out throwing

5. Tooth worker the length determination;

6. Root canal mechanic and medical treatment

Mechanic and medicine with treatment At the end of the channel ozonated physiological solution with after washing ozonated physiological of the solution electrophoresis 10 minutes during done

1. Root channels paper ends with dried.

2. Root channels calcium preparations with temporary filling

With that together, periodontal treatment German company Durr Dental by work released Vector system increased.

PERIODONTAL TREATMENT WITH "VECTOR" APPARATUS

Vector device (the "Vector" device) is this worker part pointed and the pressure difference in adjustment transfer feature have been small, compact

device. To the gingival pockets come in to go possibility giving thin flat or curved ends With that together, tooth property under not only ultrasonic waves are sent, they hard tooth stones small to particles divides and crushes, perhaps different microparticles own into received abrasive materials with water flow too.

Vector system with treatment analgesia and surgery performed without intervention (curettage). is increased. Layers take to throw and gingival pockets cleaning oscillating metal instrument with not but small dispersed watery of the solution oscillating a drop with will happen Therefore, manipulation almost without pain and does not require anesthesia : Vector Fluid Polish suspension one of time in itself delivery to give you sensitive tooth surfaces storage and grinding enable will give.

Tartar , microbial biofilm and bacteria thin tools using root levels periodontal your pocket bottom to the part , even anatomical in terms of difficult has been soft in places to tissues harm without giving take thrown away Root surfaces hydroxylapatite particles own into using Vector Fluid Polish is cleaned and polished. Root thin is cleaned and as before not thrown away ". Even deep gums plaque in pockets (up to 11 mm). efficient take thrown away. Endodontic in the 2nd visit (6-7 days). treatment done increased , that's it including root channels constant respectively to fill and teeth recovery Endodontic events to the complex root channels ozonated physiological solution with treatment and ozonated physiological of the solution electrophoresis enters

Periodontal treatment complex "Vector" apparatus with the first from treatment after control inspection and supportive therapy.

2.3 STUDY ELECTRICAL EXCITABILITY OF THE PULP

Dental pulp electrochemistry the limit determination electroodontometry mode maximum vine power 255 mA. There is a lot of "EOM-3" (Russia). functional device.

Pulp electricity study of excitability (PEE). a nurse in the presence of done is increased. Initially, the device electrochemistry checked, of this for active and passive electrodes is connected, it flow regulator button with delivered of giving smoothness checked, Tishin surface well done dry, from saliva separate after, they to learn they start.

On a damp pillow wrapped passively the electrode the patient in hand squeeze is placed. Active electrode cotton of fluff thin layer with wraps, then gets wet and test your teeth to the surface is placed. Nurse vine no problem passes and the patient pain appears to be gives a signal about, ie at the time instrument indicators a nurse by note is being done. Coronal part preserved the rest without, active electrode cross section of the edge in the middle, on the molars - lunge of the hump on top, on premolars - medial lung of the hump on top is used.

PULP MICROCIRCULATION STUDY

The state of microcirculation of the dental pulp is an effective way to assess its vitality and functional state.

The patient research to do dental sitting in a chair in the situation done is increased. Necessary inspection factors: from examination at least 1 hour before of the teeth hard tissues, mouth and tooth property mucus to the floor (teeth cleaning, hard food consumption make, from gum use and others)

effect do not show and psycho-emotional stress. Laser doppler flowmetry (LDF) record register from transfer before blood pressure is measured, as a result of results reliability change.

Dental pulp microcirculation from learning before, tooth color and straight away from the pulp to the magnitude of the received signal effect reach due to hardware compensation of the signal level done is increased. for this being studied tooth of the crown high from three to one black elastic in the appendix light manual is installed and automatic take to throw method with on the device biological zero is taken.

From this then the light referrer probe tooth vestibular or buccal to the surface perpendicular respectively cervical in the region coronal pulp 2 mm above the gingival margin in the area will be placed. Light referrer trial installation tooth of the pulp blood vein system with closely depends on periodontal vessels reaction prevention get for to the tooth sure pressure without transfer done is increased. Pulp in microcirculation blood of flow change about useful signal found, LDF- per gram.

3-5 minutes and him later on automatic in mode again to work done increases.

Previously, this from technique used without, LDF-grams intact symmetrical from the tooth note done Your tooth vitality, caries, pulpitis and periodontal diseases with pulp inside blood of flow situation determination for being studied doppler images of the tooth and intact teeth image unsymmetrical is compared.

STUDY OF PERIODONTAL MICROCIRCULATION

Periodontal in veins microcirculation condition by " Lazma " (Russia, Moscow). work capillary "LAKK-01" issued blood of flow laser from the analyzer using laser doppler flowmetry (LDF) method with was studied.

Microcirculation the following features studied: integral indicator of microcirculation - MK, d - erythrocytes in the stream time to change descriptive standard deviation, variability coefficient - of micro vessels vasomotor activity reflection bringer bullet and microcirculation efficiency indicator (MEI)- microcirculation in the system active and passive of processes ratio.

Active those who are studying : A a waves / PM * 100% - blood veins on the walls endothelial cells of concentration to change describes and ALF waves / PM * 100% - myogenic activity and blood vein tone passive with one in line : ACF waves / PM * 100% - heart structural part of microcirculation to hemodynamics added contribution as well periodontal veins and in AHL waves intravascular resistance / PM * 100% - breath get excursions, microcirculation mechanisms because of surface coming periodontal blood vein of the department venous in the part pressure to change describes.

Microcirculation indices in the area of EPI (problematic tooth) and no EPI symmetrical in teeth (intact tooth) from treatment previous in periods, trigger the tooth endodontic treatment and periodontal pockets from curettage after and from treatment after not done

MICROBIOLOGICAL RESEARCH METHODS

Damaged periodontal pocket (Pp) and root periodontal in canal (IK). Pathogens contained molecular genetic studies were conducted. Prevotella intermedia (Pi), Tannerella forsythia (Bacteroides forsythus) (Nf), Treponema denticola (Td), Aggregatibacter actinomycetemcomitans (Actinobacillus actinomycetemcomitans) (Aa) and Porphyromonas gingivalis (Pg) DNA identify LLC NPF " Genlab ". work released "Multident-5" jets collection using done increased

Test material sterile paper endodontic pin collected using (No. 30), it is physiological solution with into a test tube will be placed. Studies from treatment before and after were conducted.

IMMUNOLOGICAL RESEARCH METHODS

From the mouth liquid and root from the channel deductions in the morning hungry to the stomach get together and work according to the issuer's instructions is stored in the refrigerator.

Immunity situation assessment (TNF- a and IL-6) and to inflammation against (IL-4 and (IL-10) cytokines concentration learning based on done increased

Cytokines level enzymes with connected immunoenzyme analysis method by LLC " Cytokin " (St. Petersburg). work issued test from the system using was determined.

BIOCHEMICAL RESEARCH METHODS

LPO processes state of lipid oxidation main products - diene to the conjugates (DK). looking evaluated ; secondary products - triene conjugates (TK) and malondialdehyde (MDA) and last products - Schiff bases (SHA). (Konyukhova VS 1989). AOT processes antioxidant status of enzymes with evaluated activity: catalase (KT); (Korolyuk MA and others 1988); superoxide dismutase (SOD) (Nishirimi N. and others 1972) and glutathione peroxidase (GP) (D. Paglia and W. Valentine 1967). of the LPO-AOT system status from treatment before and after root canal and mouth liquid in the composition was evaluated.

RADIOLOGICAL RESEARCH METHODS

Research X-ray stage as periodontium and apical in the periodontium destructive of the process weight evaluation for orthopantomogram analysis was conducted. All patients determined :

alveoli between bone tissues structure and mandibular body, bone texture destruction activity level, osteoporosis and osteosclerosis furnaces presence destructive of changes nature :

- in the periodontium - alveolar bone texture destruction level: elementary, 1, 2, 3;
- in the periodontium - periodontal cavity position, periapical in the region and furcation in the field bone tissue destruction.
- bone internal of their pockets existence
- bone under their pockets periapical destruction direction with connection

Treatment results well, doubtful and was assessed as unsatisfactory.

Endodontic "good" results of treatment usual or a little enlarged (less than 1 mm) periodontal cavity, earlier x-ray of radiation loss, neighbor to the teeth relatively normal cortical plate, resorption signs absence, root of channels apical part to cementum- dentin three measured to fill with seeing released Borders (apical 1 mm from the hole).

"Doubtful" result criteria: broad periodontal cavity (less than 2 mm), x-ray its rays cleaning of the center preserved stay or a little reduction, cortical of the plate uneven compression (neighbor teeth with compared to), light progressive of resorption indirectly of signs availability, filling of substance existence apical through the hole outside

"Unsatisfactory" results of periodontal cavity expansion (more than 2 mm), periapical destruction in the center bone tissues recovery lack of or x-ray radiation zone of size increase, new cortical of the plate lack of formation, x-ray bone of density new centers appear to be, that's it including in the area lateral surface of the root, filler substance periapical to tissues apical from three big holes with take throw, bone texture and of the root progressive of resorption directly signs.

STATISTICAL RESEARCH METHODS

Uzbekistan in the Republic of endodontic -periodontal injuries have been to patients dental help show according to the examination was conducted.

Research from the beginning before we each one separately problem according to experts in the price of differences reliability by learning we went out This methodical approach territorial of differences an expert to the

conclusion effect determination for used of indicators big part for statistics in terms of differences not detected (P> 0.05).

Selected issues from grouping then, arithmetic average values, mean errors and standard deviations counting it's out the conclusion to generalize possibility gave, that is, systematic whole evaluation for their degrees to combine.

Each in the group deviations of the group average arithmetic from the values calculated, and then to the deviation sigma.

Collection only "+" signs with proportions according to done increased because in studies importance " from many to a small extent " principle according to counting developed

These sigma deviations from being transferred after high statistics sensitivity have been single measure to coefficients to give possibility gave From this in addition to this of the problem in the group importance weight category of sigma deviations as sum (∑d s s) is obtained. ∑d s depending on the problem known degree given [1].

Periodontitis with hurt development of EPI in patients probability quantitative evaluation coefficients ratio as counting developed

Of opposition superiority or coefficient ratio this periodontal to diseases played patients in the group of the event (in our case, EPI development) happened to be probability and surface not coming probability ratio. In a 2x2 table generalized data with coefficients count comfortable :

Danger factor	The results have (1)	The result no (0)	**Total**
Danger factor t (1)	A	B	**A ± B**

Danger factor no (0)	C	D	**C ± D**
Total	**A ± C**	**B ± D**	**A ± B ± C ± D**

The odds ratio for this table was calculated using the following formula:

Coefficients ratio importance evaluation 95% confidence for of the interval borders counting generated ("trust interval" to 95% $OR = \frac{A \cdot D}{B \cdot C}$ IO or 95% CI English "confidence interval"). 95% CI is higher than the border value to find formula :

$$e^{ln(OR)+1,96\cdot\sqrt{\frac{1}{A}+\frac{1}{B}+\frac{1}{C}+\frac{1}{D}}}$$

95% CI of bottom the limit to find formula :

$$e^{ln(OR)-1,96\cdot\sqrt{\frac{1}{A}+\frac{1}{B}+\frac{1}{C}+\frac{1}{D}}}$$

Periodontitis with pain in patients periodontitis weight and tooth curry y esi stage and their mutual influence of the teeth electrodontometric parameters to the top effect level checked.

Periodontitis and Kari y es of weight vital teeth of the pulp electrodontometric parameters to the value of effect level this of the parameter deviation squares from the total is :

$Ept = \frac{100\cdot Oas}{\sum cu}$, in which

Ept - teeth electrodontometric parameters of the factor effect level

Oas - under study of factors effect due to electricity of odontometry average from value exclusion squares sum;

∑cu - all controlled, uncontrolled, random factors and measurement mistakes effect due to electricity of odontometry average from value exclusion of common sum of squares.

Periodontitis and tooth of his career electrodontometric indicator to the value of influence importance Fisher's F-test with was evaluated. Effects if their probability $P < 0.05$ significance is equal to 0.95 or from him big if there is, it is considered important.

Treatment different methods efficiency comparative evaluation by the Bayesian formula (P1 - P2 / P1 - P2) x 100% done increased, this where P1 and P2 are compared in groups treatment efficiency is considered Treatment effectiveness to group 1 and Vector ultrasound from the system in use of treatment average common efficiency looking was evaluated.

Statistics processing to give personnel using Microsoft Excel on a computer done increased of differences importance Student's t-test based on was evaluated.

2.4 ENDODONTO -PERIODONTAL OF INJURIES SPREADING AND CLINICAL FEATURES OF APPEARANCES IN THE REPUBLIC OF UZBEKISTAN.

Clinical appearance in detail analysis make , of patients complaints , clinical and X-ray studies that's it showed that to the dentist-therapist going EPI occurs in patients of being frequency is 29.45 ± 2.52% organize does ; that's it including EPI endodontic in 18.46 ± 4.04% of cases to treatment appeal did in patients and in 45.80 ± 4.35% - periodontal diseases treatment for appeal did in patients found

Table 3.1.1

A dentist is a therapist visit as a result EPI determination level

Age	Appeal to do reason :						Total		
	Endodontic diseases			Periodontal diseases					
	Total patients	Dz : EPI placed :		Total patients	Dz : EPI placed :		Total patients	Dz : EPI placed :	
		Healing - blindness from the side	On the ground		Healing - blindness from the side	On the ground		Healing - blindness from the side	On the ground
18 - 25	27/100.0	-	1/3.70 ±3.60	16/100.0	-	4/25.0 ±8.33	43/100.0	-	5/11.62 ±4.88
26-34	32/100.0	22/6.25±4.28	6/18.75 ±6.90	22/100.0	-	10/45.45 ±10.71	54/100.0	2/3.70 ±2.57	16/29.63±6.21
35-44	62/100.0	2/3,23 ±0.25	16/25.81±	51/100.0	4/7.84 ±3.76	27/52.94 ±6.99	113/100.0	6/5,3 ±12.10	43/38.81±4.58
45-54	54/100.0	3/5.56 ±3.11	8/14,81 ±5.56	32/100.0	2/6.25 ±4.28	15/46.88 ±8.82	86/100.0	5/5.81 ±2.52	23/28.39±4.86

55 and >	20/100.0	-	5/25.0 ±9.68	10/100.0	-	4/40.0 ±15.49	30/100.0	-	9/30.0 ±8.54
Total	195/100.0	7/3.60 ±1.33	36/18.46±4.04	131/100.0	6/4.58 ±1.83	60/45.80±4.35	326/100.0	13/4.02±1.08	95/29.45±2.52

That's it together, endodontic diseases treatment for appeal did in patients only in 7 cases (3.60 ± 1.33%) doctors periodontal pocket that there is and apex and periodontal pocket in the middle common transition that there is; own in turn, periodontal in 6 patients (4.58 ± 1.83%). diseases treatment with engaged in doctors tooth root to the top arrived went long narrow periodontal pocket noticed. to EPI never when diagnosis was not placed and complicated endodontic and periodontal treatment was not

Note that should (Table 3.1.1) endodontic diseases treated in patients we periodontium different level inflammatory. We also found injuries.

Periodontal of diseases frequency and how many weight in detail learning that's it showed that to dentist-therapists to treatment appeal did in patients each different in weight periodontal diseases prevalence is 71.78 ± 2.50 % organize (Table 3.1.2). With that together, treated diagnosis of PMP in 41.71 ± 2.73% of patients placed and 15.03 ± 1.98% and 15.03 ± 1.98% PSP and PIP . So endodontic diseases treatment for appeal did in patients periodontal of diseases presence is also noted is presented in table 3.1.3.

EPI occurs to be of frequency common periodontal injuries to existence directly dependence was determined. So periodontal of the disease heavy clinical signs did not happen with EPI in patients morbidity is 18.48 ± 4.04%

organized did and periodontal to diseases played in patients - almost 2 times many - 33.76 ± 3.07%.

However, we appear EPI of being frequency without periodontitis and periodontal disease with hurt in patients difference does, but periodontal disease and between EPI dependence is there or periodontitis with hurt risk of EPI in patients.

Table 3.1.2

Dentist in the presence of periodontal disease spreading

Young groups, Number	PIP	PMP	PSP	Total
18-15, n=43	5/13.95±6.55	3/6.98±3.88	½,33±2,30	10/23.26±6.44
26-34 , n= 54	10/18.52±5.29	12/22.22±5.66	3/5.56±3.11	25/46.30±6.79
35-44, = 113	15\13.27±3.19	56/49.56±4.70	28/24.78±4.00	99/87.61±3.10
45-54, n= 86	13/15.12±3.86	50/58.11±5.32	12/13.95±3.74	75/87.21±3.60
55 i > , n= 30	5/16.67±6.80	15/50.0±9.13	5/16.67±6.80	25/83.33±6.80

Total : n= 326	49/15.03±1.98	136/41.71±2.73	49/15.03±1.98	234/71.78±2.50

3.1.3 - table

Periodontal of the disease to existence or to the absence looking dentist in the presence of endodonto -periodontal of injuries spreading

Young groups	Patients without periodontal disease, n = 92		Periodontitis with pain patients n= 234	
	Patients the number	EPI is defined	Patients the number	EPI is defined
18-25	33/100.0	3/9.09±5.004	10/100.0	2/20.0±12.65
26-34	29/100.0	6/20.69±7.52	25/100.0	10/40.0±9.80
35-44	14/100.0	4/28.57±12.07	99/100.0	39/39.39±4.91
45-54	11/100.0	2/18.18±11.63	75/100.0	21/28.0±5.18
55	5/100.0	2/20.0±17.89	25/100.0	7/28.0±16.97
Total	92/100.0	17/18.48±4.04	234/100.0	79/33.76±3.07

Note: the numerator is patients the number in the denominator - age in the group patients in % of number.

Periodontitis with hurt development of EPI in patients probability quantitative evaluation coefficients ratio as counting developed

In our case, opportunities calculating the coefficient (OR). for initial data is presented in table 3.1.4.

Table 3.1.4

Periodontitis with pain in patients endodontic - periodontal of injuries development calculating the coefficient (OR). for four area connections schedule

P a rhodontal disease	EPI is present	EPI is present it's not	Total
There is	79 (A)	155 (V)	234 (A+B)
No	17 (S)	75 (D)	92 (S + D)
Total	96 (A+S)	230 (V+ D)	326 (A+V+S+ D)

Periodontitis with severe development of EPI in patients coefficient count the results are presented in table 3.1.5.

Table 3.1.5

Periodontitis with pain 95% confidence in patients had an interval (IO). endodonto -periodontal of injuries development for coefficients count results.

of the development of EPI in GP patients probability	0.510
Without a GP development of EPI in patients probability	0.227
Opportunities coefficient (OR)	2,249
Opportunities of the coefficient standard error (S)	0.302
Bottom limit 95% IO (CI)	1,244
High limit 95% IO (CI)	4,015
Confidence of the interval bottom border	3.47%
Confidence of the interval high border	58.26%

Options from Table 3.1.5 from the coefficient (IK). apparently periodontitis with hurt development of EPI in patients the probability is 2.249 ha equal to From 1 of the IK value big to be , the development of EPI periodontal disease to existence directly dependence means

Coefficients ratio importance evaluation 95% confidence for the interval borders counting generated ("trust interval" from 95% IO or 95% CI English «confidence interval»).

It can be seen from table 3.1.6 as 95% IO (CI) of bottom limit 1.244, 95% of IO (CI). high limit is equal to 4.015. Ours our example for the 95% odds ratio (CI) is 1.244 to 4.015 will be. Confidence the range is 1 own into can't , ie of borders both value is also greater than 1 and periodontitis and EPI development between relationship $p < 0.05$ significance level statistics important have said to the conclusion.

E the number bottom and high trust to the interval suitable coming to power lifting (from limits antilogarithm taking), we coefficients ratio trust range we got Ours in our situation trust range limits from 3.47% to 58.26%.

So doing research that's it showed that in general periodontitis with hurt patients between EPI determination probability periodontal disease signs didn't happen to patients 2 times than high Found dependence statistics in terms of is significant because the 95% CI is 1 own into can 't, his bottom and high border values greater than 1.

EI occurs to be frequency learning based on the following conclusions.

to a dentist-therapist going EPI occurs in patients of being frequency is $29.45 \pm 2.52\%$ organize ; that's it including EPI endodontic in $18.46 \pm 4.04\%$ of cases to treatment appeal did in patients and in $45.80 \pm 4.35\%$ - periodontal diseases treatment for appeal did in patients found

dental and therapeutic in the presence of diagnosis of EPI no, complex endodontic and periodontal treatment not applicable;

periodontal development of EPI diseases for important risk factor: development of EPI danger without periodontitis to patients 2 times than above (dependency statistics in terms of significant, $P \leq 0.05$).

Part 3. EXPERT EVALUATION OF DENTAL CARE FOR PATIENTS WITH ENDODONTO-PERIODONTAL INJURIES.

So today, in the day Uzbekistan in the Republic of dentistry current from problems one with this EPI the sick treatment and rehabilitation is to do With that together, there is official documents analysis to do that's it shows that the present in the day statistics system there is not : EPI also appears of being frequency is also special to treatment need It is inevitable respectively real the need account received without EPI organize achieve, plan and optimal treatment effect does Modern with EPI under conditions sick to patients help optimization with depends solution not done problems there is. Expert in Table 3.2.1 groups by assessment quantitative level given.

of problems the first from the list problems group the most high level important have 1 - "EPI's appearance of being different reasons there is " - 9.03 ± 0.09 points; 2 - " EPI register transfer for special to the list get and report forms no " - 8.47 ± 0.08 points; on the 3rd - "medical in institutions EPI register permeability" - 8.60 ± 0.09 points; acc 4th and 5th respectively "EPI is low occurs" - 7.67 ± 0.11 points and "statistical account to get inconsistency" - 7.63 ± 0.08 points.

Diagnosis of EP I and of treatment clinical aspects with depends for list 2 of problems maximum evaluation points EPI clinical appearances about lack of knowledge of with depends to problems given - 8.47 ± 0.13; of treatment high work intensity - 8.43 ± 0.11; With that together, diagnosis complexity and special preparation necessity problems were evaluated each one by 8.40 ± 0.10 points;

Experienced of experts lack of and dentists - therapists and of periodontologists mutual discipline connections problems, suitable respectively, 7.86 ± 0.09 and 7.07 ± 0.3 points; of treatment duration 7.57 ± 0.4 points and until treatment has been stagnation level is 7.06 ± 0.09 points organized did.

Table 3.2.1

Experts to calculations according to (M ± m) being studied in places endodonto -periodontal injuries treatment in the system of problems importance level comparative evaluation

Seeing outgoing problem	Experts group			Average
	1 st	2nd	3rd	
Statistics account				
1.1. EPI is rare	7.0±0.35	7.7±0.42	8.3±0.50	7.67±0.11
1. 2. EPI will appear according to different reasons	9.1±0.79	8.7±0.27	9.3±0.32	9.03±0.09
1.3. Medical EPI registration in institutions that it has not been transferred	7.6±0.45	8.2±0.47	8.5±0.48	8.10±0.9
1.4. Special accounting and statistics of forms the absence of EP I calculation makes it difficult	8.2±0.38	8.0±0.31	9.2±0.21	8.47±0.08
1.5. Statistics account inconsistency with EPI sick to patients help to show organize in	7.2±0.47	7.5±0.48	8.2±0.41	7.63±0.08

doing to problems take will come				
Diagnosis of EPI and clinical aspects of treatment				
2.1. Information about clinical manifestations, etiopathogenesis, treatment and the EPI protocol	8.9±0.48	7.3±0.32	9.2±0.38	8.47±0.13
2.2. EPI diagnosis complexity	7.40±0.53	8.4±0.48	9.4±0.28	8.40±0.10
2.3. EPI in treatment necessary has been special preparation, skill and clinical experience	8.0±0.50	8.3±0.45	8.9±0.33	8.40±0.0
2.4. Experienced dentist-therapists and periodontologists	7.1±0.43	8.0±0.31	8.5±0.39	7.86±0.2
2.5. Treatment of EPI high work intensity	7.9±0.51	9.3±0.42	8.1±0.46	8.43±0.1
2.6. Treatment of EPI long duration	8.9±0.55	7.0±0.39	6.8±0.34	7.57±0.1
2.7. EPI until treatment has been stagnation	7.7±0.47	6.6±0.28	6.7±0.47	7.0±0.09
2.8. Dentist - therapists and periodontologists in the middle interdisciplinary mutual effect	7.2±0.79	8.9±0.33	6.9±0.51	7.67±0.9
Personnel preparation				
3.1.EPI clinical and etiopathogenesis according to	7.3±0.50	7.6±0.39	8.3±0.50	7.73±0.01

limited knowledge, postgraduate studies until and from him next in stages				
3.2. According to EPI special topic of improvement	9.1±0.29	7.5±0.39	7.8±0.52	8.13±0.11
3.3. Tooth doctors - general practice doctors and on EPI of dentists and periodontists deep to specialization interest low	7.2±0.41	8.3±0.45	7.7±0.45	7.73±0.8
Specialized dental help organize reach				
4.1. EPI was patients diagnosis and to treatment complex of lack of approach	7.7±0.42	8.0±0.53	6.9±0.43	7.53±0.09
4.2. Special dentist-therapist and dentist-periodontist specialists in the middle continuity	7.2±0.41	8.3±0.45	7.7±0.45	7.73±0.09
4.3. Accepted to the place compared to EPI treatment mode lack of	6.9±0.29	7.4±0.39	7.4±0.42	7.23±0.2
4.4. EPI was patients treatment of lack of protocols	8.0±0.57	8.2±0.44	9.3±0.27	8.50±0.12

From the 2nd list of problems apparently as experts EPI in treatment clinical and diagnosis problems big importance they give

3rd list of problems - "personnel training", doctors special thematic to improve need senior - 8.13 ± 0.11 points; also limited in quantity knowledge

and EPI matters according to depth to specialization of doctors interest low one is 7.73 ± 0.08 points.

EPI was to patients specialized help organize to do with depends EPI in list 4 of problems treatment according to protocols work exit necessity marked - 8.50 ± 0.12 points; dentist - therapists - periodontologists in the middle continuity not enough - 7.73 ± 0.09 points; to treatment complex of approach deficiency - 7.53 ± 0.09 points and diagnosis according to complex of approach deficiency - 7.23 ± 0.12 points (Table 3.2.1).

The comparison made it possible to conclude that: regional problems do not have a significant impact on the level of importance of experts' assessments, and the studied problems are the same for all studied regions. Taking into account the competence of the research objects and the specific characteristics of the selected regions, it can be assumed that these problems are the same for the whole country.

It can be seen that all the problems included in the expert assessment are of high importance and require their solution.

However, the level assessment made it possible to distinguish the most important and primary problems (Table 3.2.2).

Table 3.2.2

Specialists to the grades according to endodonto -periodontal injuries with sick patients treatment in the system problems importance degree integral sigma and level evaluation

Criterion	Experts of grades in groups average group from the value sigmoid aside outputs			Sigma deviations sum ∑ ds	Degree
	1st _	2nd _	3rd _		

List 1 of problems					
1.1.	-0.76	0.01	0.74	0.75	1
1.2.	0.06	-0.36	0.29	0.35	5
1.3.	-0.52	0.10	0.41	0.51	4
1.4.	-0.19	-0.46	0.64	0.64	2
1.5.	-0.42	-0.11	0.52	0.52	3
"±" sign for list 1 of sigma deviations with average value is 0.55					
	List 2 of problems				
2.1.	0.52	-1.24	0.75	1.27	1
2.2.	-0.90	0.05	0.85	0.85	4
2.3.	-0.29	-0.02	0.45	0.44	8
2.4.	-0.71	0.37	0.65	0.72	6
2.5.	-1.0	0.82	-0.80	0.82	5
2.6.	-0.99	-0.60	-0.85	0.99	3
2.7.	0.76	-0.73	-0.24	0.76	7
2.8.	-0.25	1.03	-0.79	1.03	2
"±" sign for list 2 of sigma deviations with average value is 0.86					
List 3 of problems					
3.1.	-0.40	-0.21	0.60	0.60	2
3.2.	0.86	-0.71	-0.21	0.86	1
3.3.	-0.56	0.56	-0.02	0.56	3
"±" sign for list 3 of sigma deviations with average value is 0.67					
List 4 of problems					
4.1.	0.13	0.54	-0.66	0.67	1
4.2.	-0.56	0.58	-0.02	0.58	3

4.3.	-0.48	0.19	0.22	0.41	4
4.4.	-0.36	0.07	0.64	0.64	2
"±" sign for list 4 of sigma deviations with average value is 0.58					

It can be seen from table 3.2.2 as it has been studied all issues relatively equal to distributed.

With that together, first place "EPI diagnosis and treatment clinical aspects" to issues about problems group possession noted, the average ∑ds = 0.86 (32.33%); in the second - "Personnel preparation" average ∑ds = 0.67 (25.19%); third " specialized dental help optimization according to " average ∑ds = 0.58 (21.80%) and fourth "EPI's appear to be reasons statistics account obtaining " average ∑ds = 0.55 (20.67%).

Indeed, this distribution with EPI harm to patients dental help improve according to separate measures groups formation necessity shows.

Presentation done analysis in groups leader seats occupied the most important problems reflection made With that together with this of problems everything is important in studies statistics in terms of proven was EPI patients treatment improvement according to measures work on the way-out application need

Research the following conclusions to issue possibility gave :

Current at the time with EPI in the country the disease diagnosis and of treatment scientific needs in consideration removable and complete to treatment help giving system there is it's not.

EPI statistics to the list to get absence of EPI medical in institutions register with the transfer EPI the sick treatment organization in reaching to problems take comes, this kind of dental of help quality, efficiency and existence reduces.

Specialist grades and significance coefficients calculations according to EPI in treatment main problems are as follows :

of EPI clinical manifestations, etiopathogenesis, treatment and forecasts about lack of information

dentist - therapists and periodontologists in the middle interdisciplinary mutual effect lack of

of diagnosis complexity;

lack of experienced experts and dentists for special preparation;

of EPI stagnation to treatment.

3.1 BASIS OF METHODOLOGICAL APPROACHES TO THE ORGANIZATION OF EARLY DIAGNOSTICS OF ENDODONTOPARODONTAL INJURIES, PREVENTION AND TREATMENT BASED ON ASSESSMENT OF THE FUNCTIONAL STATE OF THE VITAL TEETH PULP.

Periodontitis with damaged vital teeth in patients with pulp functional status

Vital teeth of the pulp functional status of the pulp electricity excitability (PEE) and microcirculation - microcirculation with the indicator (MK). was evaluated.

Various in weight periodontitis with pain in patients tooth of the pulp electricity excitability status is presented in table 4.1.1.

It can be seen from table 4.1.1 apparently healthy PEE value of tooth anatomical localization and initial diagnosis with was determined. Intact note the minimum PEE of the teeth made - 2.71 ± 0.2 mA (2.0 - 3.2 mA); 5.32 ± 0.22 mA (3.3 - 7.2 mA) in premolars and in molars - 7.11 ± 0.31 mA (7.3 - 12.11 mA).

Later on these indicators healthy to the periodontium have been of people intact to PEE the teeth regional standards as used

Periodontal disease with pain in patients with demineralization (in the stain phase caries, superficial and medium and deep caries) of teeth sensitivity has changed. This process PEE increase through note done So cutting in the teeth belongs to intact tooth to the group relatively increase 177.17% ($P < 0.01$); in premolars - 60.0% ($P < 0.01$) and in molar - 77.36% ($P < 0.01$) (Table 4.1.1, Figure 4.1.1), which morphological and tooth significant level disintegration with pulp inside structural violations.

Table 4.1.1

Periodontitis to the vital pulp in patients with teeth electroodontometric indicators

Localization	Intact teeth	Caries		
		Surface	Medium	Deep
Unbroken				
Frontal teeth	2.71±0.10	3.21±0.14	3.62±0.17	7.51±0.31
Premolars	5.32±0.22	6.71±0.26	7.25±0.25	8.51±0.39
Molars	7.1±0.31	8.12±0.37	9.62±0.39	12.61±0.55
PIP				
Frontal teeth	2.92±0.12	3.51±0.17	4.03±0.15	8.91±0.23
Premolars	5.80±0.21	7.38±0.26	8.12±0.31	10.31±0.43
Molars	7.75±0.31	9.24±0.36	10.46±0.41	15.12±0.72
PMP				
Frontal teeth	3.40±0.14 ^	3.91±0.15 ^	4.55±0.19 ^	10.32±0.48 ^
Premolars	6.38±0.27 ^	8.03±0.36 ^	9.3±0.44 ^	11,95±0, 4 7 ^

Molars	8.52±0.33 ^	10.00±0.41 ^	12.28±0.53 ^	18.72±0.77 ^
PSP				
Frontal teeth	3.80±0.14 ^o*	4.81±0.22 ^o*	5.76±0.28 ^o*	13.42±0.53 ^o*
Premolars	7.18±0.31 ^o*	10.03±0.39 ^o*	11.35±0.43 ^o*	14.60±0.56 ^o*
Molyars	9.81±0.39 ^o*	12.58±0.47 ^o*	14.38±0.63 ^o*	22.07±0.71 ^o*

Note: • - P <0.05 cutoff oath pile to the teeth relative to ; to the premolars vs. χ - P < 0.05; intact to the periodontium vs. ^ - P < 0.05; to PIP relative to º - P <0.05; to PMP vs. * - P < 0.05.

Periodontitis with hurt of patients teeth PEE of comparative analysis of periodontitis weight, localization and with caries injuries to the stage looking, with caries in the teeth pulp electroexcitability of the border decline level common periodontitis weigh.

Deep caries increase in PEE with maximum level. So , PEE value with PIP intact of the periodontium belongs to indicators increased by 18.64 - 19.90% (P < 0.05); With PSP - from 37.42 - 48.45% (P < 0.01) and with PMP - from 71.56 - 78.70% (P < 0.001) (Table 4.1.1, 4.1.2- picture).

Periodontitis with hurt in patients belongs to teeth to the group relatively to the vital pulp have PEE growth of teeth and healthy periodontal to the disease played in patients with caries injuries stage, perhaps periodontal of the disease inflammatory-destructive damage weight and of the pulp

structural and functional status between dependence existence reflection makes

Received results of periodontitis development with pulp in the tissues inflammation appear to be and reparation of processes violation for conditions which creates changes happen it will be electrochemistry of the border to decrease take to believe that it will come basis will give.

LDF indicators analysis - grams each different to localization have been in the teeth of microcirculation another level set put: vital teeth in the pulp microcirculation value healthy periodontium in line increased goes - tooth edges and tooth angles - premolars and molars.

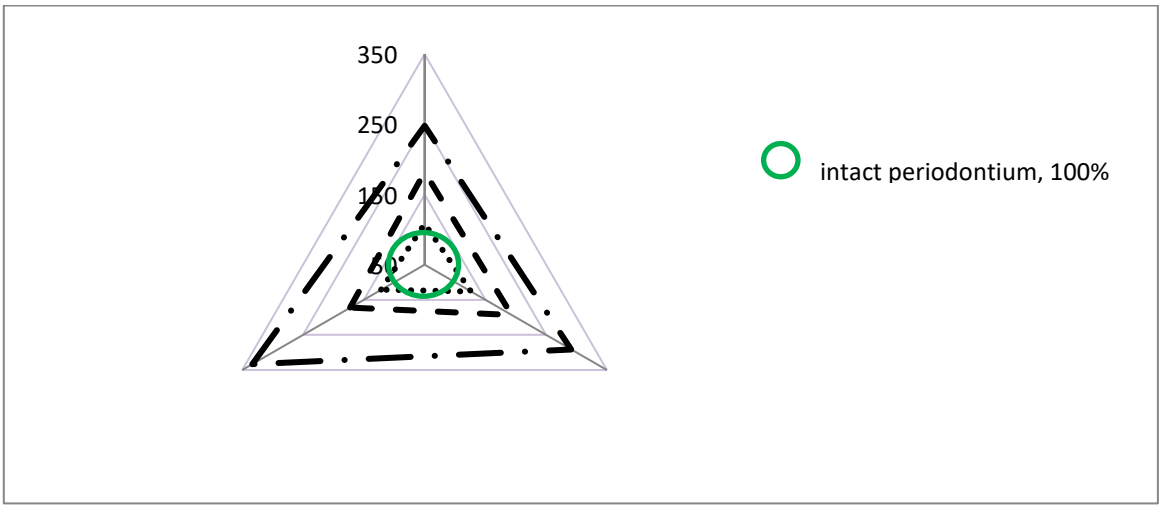


Figure 4.1.3. To the stage of caries depending on (healthy to the tooth in % relative to) intact periodontal vital teeth of the pulp microcirculation.

Thus, the value of the integral M integral indicator in premolars with a healthy periodontium is 26.97% higher than the microcirculation of incisors and canine teeth (P≤0.05); and in molars, respectively, by 53.28% (P≤0.05) (Table 4.1.2, Figure 4.1.3).

Our results show that US Corresponds to Tulip's information. It was shown that the greater the volume of the crown pulp and the lower the optical density of the hard tissues of the tooth, the higher the microcirculation index.

Table 4.1.2

Periodontitis with damaged vital teeth in patients with pulp indicators of microcirculation (M).

Localization - rish	Intact teeth	Caries		
		The stain is on the surface	Medium	Deep
Unbroken				
Frontal teeth	1.52±0.06	1.62±0.07	2.77±0.17	3.77±0.11
Premolars	1.93±0.11	2.44±0.09	3.73±0.12	5.62±0.24
Molars	2.33±0.11	2.83±0.13	4.02±0.19	7.77±0.35
PIP				
Frontal teeth	1.62±0.08	1.87±0.07	4.28±0.25	6.85±0.23
Premolars	2.23±0.09	2.93±0.13	6.28±0.21	7.60±0.20
Molars	2.53±0.11	3.41±0.16	6.67±0.21	9.84±0.32
PMP				
Frontal teeth	1.82±0.08 º	2.66±0.13 º	5.31±0.19 º	7.33±0.25 º
Premolars	2.62±0.12 º	4.41±0.16 º	6.14±0.24 º	11.02±0.47 º
Molars	2.85±0.11 º	5.31±0.21 º	6.83±0.23 º	15.56±0.67 º
PSP				
Frontal teeth	1.03±0.05 º	1.08±0.03 º	1.42±0.07 º	1.52±0.05 º
Premolars	1.28±0.05 º	1.53±0.06 º	1.86±0.06 º	2.44±0.16 º
Molars	1.53±0.07 º	1.68±0.07 º	2.02±0.05 º	3.05±0.11 º

Note: • - P <0.05 Frontal teeth oath pile to the teeth relative to ; to the premolars vs. χ - P < 0.05; healthy to the periodontium vs. ^ - P < 0.05; to PIP relative to º - P <0.05; to PSP vs. * - P < 0.05.

Clinical point of view from the point of view, periodontium intact in people dentin in caries pulp microcirculation caries damage to the stage looking learning important Dentin caries with microcirculation in the index with caries injuries stage with depends has been control (relevant of the group intact teeth). growth presence was determined

(Table 4.1.2, Figure 4.1.4).

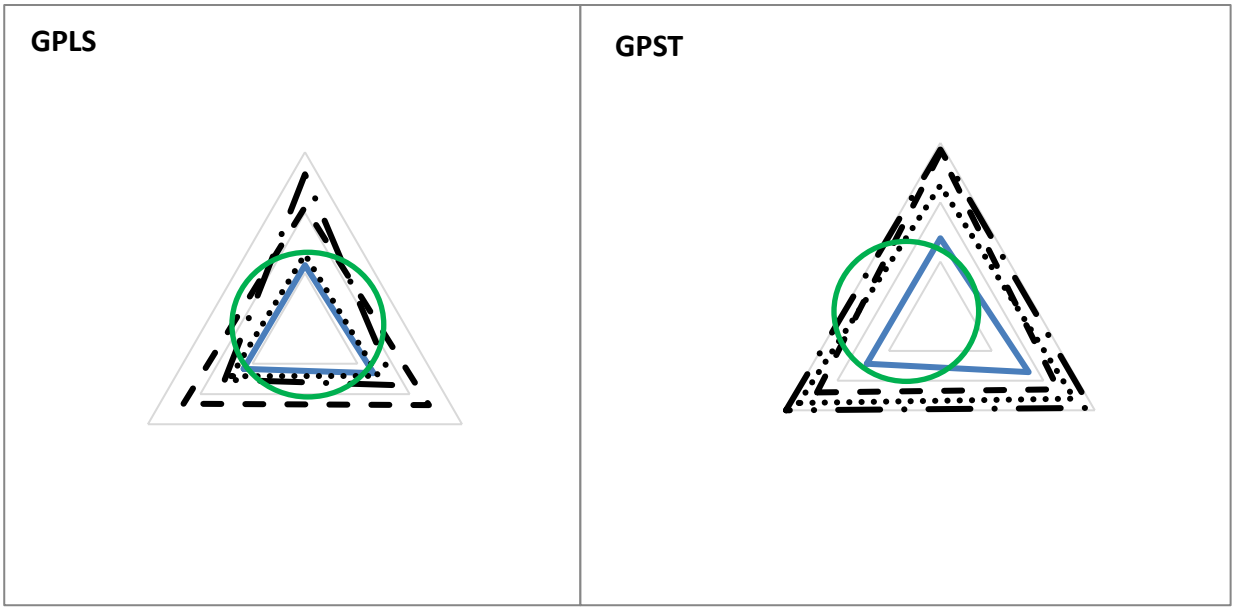
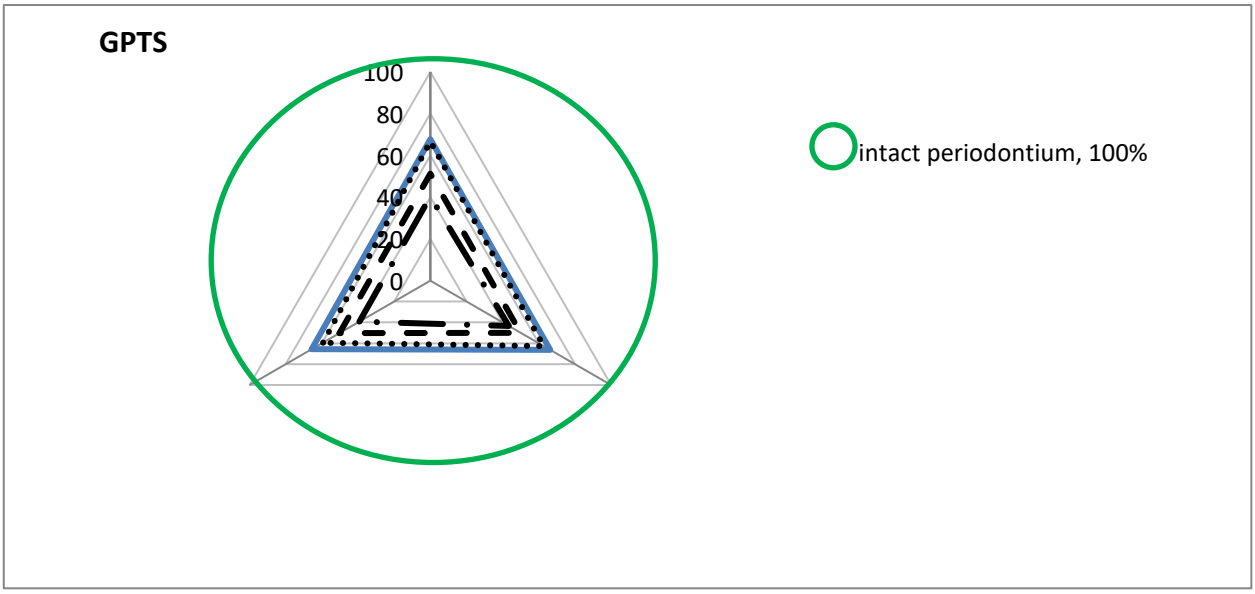


Figure 4.1.4. Peri



odontitis with pain in patients of caries to the stage depending on vital teeth of the pulp microcirculation (intact to the tooth in % relative to).

The stain is in phase with caries cutting teeth and pile index M in teeth intact to the teeth increases by 6.05% (P≥0.05); average caries with - 82.23% (P≤0.05) and deep caries with - 148.03% (P≤0.05); premolars according to suitable dynamics 26.42% (P≤0.05) . organize did 93.26% (P≤0.05) and 191.20% (P≤0.05) and premolars, respectively with 21.46% (P≤0.05); 72.53% (P≤0.05) and 233.91% (P≤0.05) (Table 4.1.2, Figure 4.1.3).

So caries with vital teeth in the pulp intact periodontium caries injuries weight increased to go with microhemodynamics increase observed.

Pulp in microcirculation defined changes, teeth to the group and initially determined to the diagnosis depends without caries in development teeth pulp of microhemodynamics functional in the situation changes reflection will make it changes level caries injuries stage differential in diagnostics basis to be able

LDF-grams learning based on periodontitis with pain in patients tooth of the pulp in microcirculation change was determined. With that together, vital teeth pulp of microcirculation violation periodontal of diseases weight with was determined (Table 4.1.2, Figure 4.1.4).

Various in weight with periodontitis in patients pulp microcirculation of indexes average indicators are presented in table 4.1.2. It can be seen from table 4.1.2 pulp microcirculation indicators with caries injuries to the stage and periodontitis to the weight looking wide difference.Blood flow situation in detail analysis in doing periodontitis with pain in patients tooth pulp 3

types of microcirculation detected: changes no - norm, basal blood of flow increase and decrease (Table 4.1.3).

Table 4.1.3

Periodontitis with pain in patients tooth in the pulp blood of flow types

Periodontitis	MK indicator		
	Normally	From the normal high	Below normal
PIP , n= 81	55/ 67.90±5.19	35/30.86±5.13	1/1.22±1.22
PMP , n= 102	50/49.02±4.95	31/30.39±4.55	21/20.59±4.00
PSP , n= 105	15/14.28±3.11	20/19.04±3.83	70/ 66.66±2.16

Note: in the numerator - teeth the number in the denominator - in the group teeth in % of the number.

PIP was vital teeth in patients of the pulp microcirculation status basal blood of flow increase with microcirculation was described main indicator - MK studied of 30.9 ± 5.13% of teeth healthy of the periodontium belongs to from the values high was with PIP sick in patients tooth pulp of microcirculation increase of the pulp each different in intensity inflammation and in it stuck to stay from events evidence (Table 4.1.3).

With PMP hurt in patients in microcirculation a lot directional changes found : in 49.02 ± 4.95% of teeth that's it such as localization teeth and caries stage with in comparison in microcirculation changes not found ; 4.95% at

30.39 - MK index sharp growth and basal at 20.59 ± 4.00% blood flow decline noted (Table 4.1.3).

with PSP basal blood flow of violation increase note done: similar localization teeth with in comparison in microcirculation changes and caries stage only in 14.28 ± 3.11% of teeth not found; like this localization and diagnosis placed to the teeth relative to MK index increase - 19.04 ± 3.83% and basal blood flow suppression - in 66.66 ± 2.11% of teeth (Table 4.1.3).

Teeth and periodontal of diseases systematic unit determined fact is " endodonto -periodontal of the concept of "syndrome". appear to be defined. This to the problem dedicated a lot numerous to work despite the tooth pulp status and periodontium between straight away and reverse contact issue controversial being remains. Periodontitis during tooth in the pulp changes, first next , alveolar ridge atrophy of teeth mobility because of neurovascular to the collection damage because of addition and main root channels through fed up lack of nutrition with depends to be possible.

Microcirculation of properties violation and periodontal of the disease inflammatory-destructive injuries heavy level between dependence periodontitis during pulp morphological of changes that it has increased shows and pulp of the situation periodontitis to the weight dependence confirms.

3.2 DISPERSION ANALYSIS OF THE INFLUENCE OF PERIODONTAL DISEASES AND DENTAL CARIES ON ELECTRODONTOMETRIC INDICATIONS OF VITAL TEETH

Periodontal diseases in treatment tooth of the pulp status and this of changes dynamics the most less studied from issues is one

Periodontitis treatment of the pulp electricity excitability of the border (of the teeth PEE of growth) further to decrease taking coming was determined. So and became PIP in patients from treatment after PEE and intact of the teeth PEE level to control increased by 16.97% compared to ($P < 0.05$) - 35.02% ($P < 0.01$); stain and surface caries stage - 13.92% ($P < 0.05$) - 29.06%; medium caries - 19.96% ($P < 0.05$) - 42.81% and deep caries - 29.48% ($P < 0.01$) - 50.06% ($P < 0.01$); PSP patients belong to indicators 32.33% ($P < 0.05$) - 58.07% ($P < 0.01$); 41.12% ($P < 0.01$) - 55.76% ($P < 0.01$); 47.51% ($P < 0.01$) - 70.086% ($P < 0.01$) and 48.45% - 80.02% ($P < 0.01$) and PSP in patients turn with 65.94% - 90.01% ($P < 0.01$); 80.06% - 95.02%; 85.08% ($P < 0.01$) - 157.93% ($P < 0.01$) and 120.05% ($P < 0.01$) - 150.04% ($P < 0.01$) (Table 4.3.1, Figure 4.3.1).

Table 7

General periodontitis traditional treatment to vital pulp in dynamics have been of the teeth electroodontometric indicators

Localization	Intact teeth	Caries		
		The stain is on the surface	Medium	Deep
	Healthy periodontal (control)			
Frontal teeth	2.71±0.10	3.21±0.14	3.62±0.17	7.51±0.31

Premolars		5.32±0.22	6.71±0.26	7.25±0.25	8.51±0.39
Molars		7.11±0.31	8.12±0.37	9.52±0.39	12.61±0.55
PIP					
Frontal teeth , n=28	Until treatment	2.92±0.12	3.51±0.17	4.03±0.15	8.91±0.23
	From treatment after	3.17±0.14º ^	4.53±0.19 º ^	5.17±0.21 º ^	11.27±0.62 º ^
	1 month later	3.02±0.13 º	3.56±0.15	4.23±0.18 º	9.76±0.31 º
Premolars , n=2 5	Until treatment	5.80±0.21	7.38±0.26	8.12±0.31	10.31±0.43
	From treatment after	5.90±0.23 º ^	7.44±0.33 º ^	8.20±0.32 º ^	10.44±0.45 º ^
	1 month later	5.43±0.13 º	6.63±0.70 º	7.63±0.30 º	9.12±0.34 º
Molars n=28	Until treatment	7.81±0.33	9.12±0.43	10.53±0.35	15.22±0.61
	From treatment after	7.60±0.35 º ^	9.23±0.42 º ^	10.66±0.37 º ^	15.20±0.64 º ^
	1 month later	7.15±0.35 º	8.25±0.36 º	9.52±0.37 º	13.36±0.55 º ^
PIP					

Frontal teeth n=40	Until treatment	3.40±0.14 º	3.91±0.15 º	4.55±0.10 º	10.32±0.48 º
	From treatment after	4.30±0.18 º ^	5.00±0.17 º ^	5.65±0.24 º ^	12.32±0.60 º ^
	1 month later	3.70±0.15 º ^	4.53±0.18 º ^	5.43±0.25 º ^	11.70±0.48
Premolars n=28	Until treatment	6.42±0.27 º	8.03 ±0.36 º	9.30 ±0.44 º	11.95±0.47 º
	From treatment after	7.44±0.31 º ^	10.06 ±0.43 º ^	12.33±0.55 º ^	15.22±0.32 º ^
	1 month later	7.04±0.26 º ^	9.12±0.33 º ^	11.85±0.48 º ^	14.70±0.59 º ^
Molars n = 34	Until treatment	8.52±0.33 º	10.00±0.41 º	12.88±0.53 º	18.72±0.77 º
	From treatment after	10.00±0.27 º ^	12.03±0.38 º ^	15.90±0.79 º ^	22.67±0.91 º ^
	1 month later	9.60±0.18 º ^	11.53±0.43 º ^	14.76±0.66 º ^	20.95±0.88 º ^
PSP					
Frontal teeth	Until treatment	3.80±0.17 º	4.81±0.22 º	5.76±0.28 º	13.42±0.53 º

	From treatment after	4.88±0.22 º ^	6.26±0.36 º ^	7.24±0.33 º ^	18.78±0.88 º ^
	1 month later	4.47±0.21 º ^	5.78±0.28 º ^	6.70±0.28 º ^	16.90±0.72 º ^
Premolars n=29	Until treatment	7.18±0.31 º	10.03±0.39 º	11.35±0.43 º	14.60±0.56 º
	From treatment after	9.60±0.43 º ^	12.75±0.62 º ^	18.70±0.60 º ^	18.72±0.89 º ^
	1 month later	9.11±3.71 º ^	12.66±0.54 º ^	18.00±0.73 º ^	18.55±0.72 º ^
Molars n = 37	Until treatment	9.81±0.39 º	12.58±0.47 º	14.38±0.63 º	22.07±0.71 º
	From treatment after	13.51±0.61 º ^	15.83±0.68 º ^	19.99±0.81 º ^	28.37±1.02 º ^
	1 month later	13.21±0.55 º ^	15.26±0.71 º ^	19.77±0.65 º ^	28.00±0.99 º ^

Note: º - P <0.05 compared to intact periodontal tooth; compared to the value before treatment ^ - P < 0.05.

Thus, the treatment of periodontitis helps to prevent secondary damage to the pulp. Removal of calculus, curettage, flap formation helps to open superficial canals or dentinal tubules, increases the spread of infection from periodontal pockets in tooth tissue and pulp and increases its destruction.

Pulp changes after treatment of periodontitis are higher in patients with severe disease, which is evidence in favor of the pathogenetic dependence of periodontal treatment on the state of the pulp. Currently, during pulpitis, the phenomenon of the formation of persistent infection foci in the hard tissues of the tooth has been proven, the organic substrate accumulates in the ultrastructural holes, cracks and fractures of the dentin (bacteria, their toxins, waste, tissue detritus), causing damage to the periodontium. can lead to and affect the course of inflammatory pathology. [3].

Undoubtedly, the treatment of periodontal diseases, which initiate and aggravate pulp diseases, greatly contributes to the effect of chronic inflammation in the pulp in the development of endodontic-periodontal pathology in the early stages of their development.

Studies have shown that changes within the pulp do not stop long after treatment.

Thus, one month after the treatment of periodontal disease in patients with PIP, PEE indicators of healed teeth increased by 11.44% (P> 0.05) - 14.62% of the corresponding values of the intact periodontium; with spot stage caries and surface caries - 10.90% (P < 0.05) - 13.92% (P < 0.05) and with deep caries - 29.99% (P < 0.05) - 30.67% (P < 0.01); A similar ratio in patients with PMP was 36.33% (P < 0.01) - 36.53% (P < 0.01); 41.12% (P < 0.01) - 44.86% (P < 0.01); 47.51% (P < 0.01) - 63.45% (P < 0.01) and 55.80% (P < 0.001) - 72.74% (P < 0.001); and 65.94% (P < 0.001) - 85.80% (P < 0.001) respectively in patients with PSP; 80.06% (P < 0.01) - 88.67% (P < 0.001); 85.08% (P < 0.001) - 148.05% (P < 0.001) and 118.00% (P < 0.001) - 125.03% (P < 0.001) (Table 4.3.1, Figure 4.3.1).

The most obvious changes in dental pulp PEE during treatment are presented in Table 5, which shows the results of comparing the specific weight of teeth with normal and increased PEE at different stages of treatment.

Studies have shown that after treatment with PIP, the ratio of PEE restored teeth compared to the indicator before and after treatment ($P \leq 0.05$; $P \leq 0.05$) and below ($P \geq 0.05$).

In patients with PMP and PSP, the ratio of teeth whose PEE exceeds the norm after treatment and is higher than the value before treatment in the long-term period ($R1 \leq 0.05$; $R2 \leq 0.05$) (Table 4.3.2).

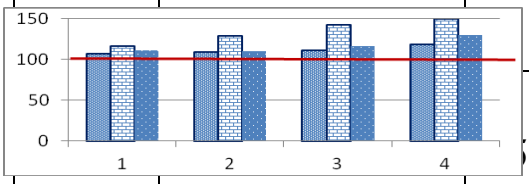
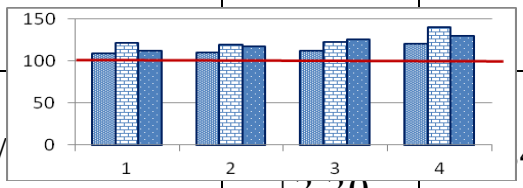
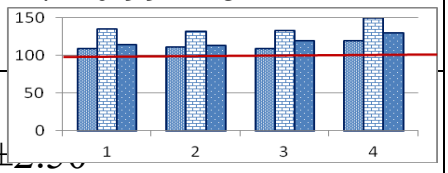
Table 4.3.2

Characteristics of teeth with different PEE in conventional treatment of generalized periodontitis

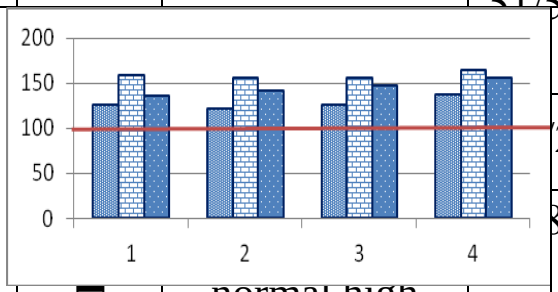
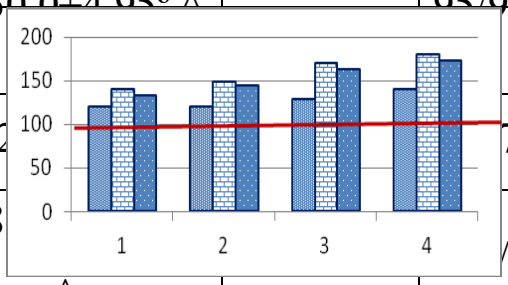
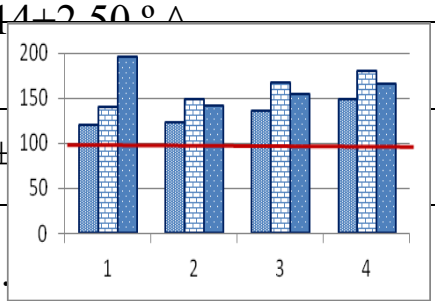
PEE		Research period		
		Until treatment	From treatment after	1 month later
PIP n = 81	The norm	54/66.66±5.27	21/25.93 ±4.85	64/79.01 ± 4.52
	From the	27/33.33±5.27°	60/74.07	MOLARS 17/20.99±4.52 ^
PMP n=102	From the		89/87.25	
PSP	normal high		^	

PIP

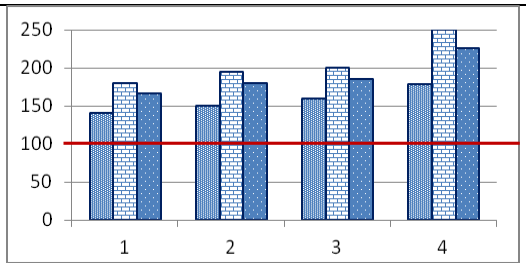
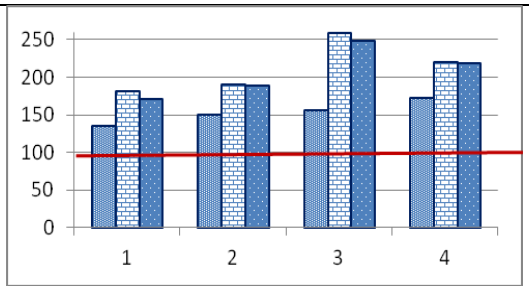
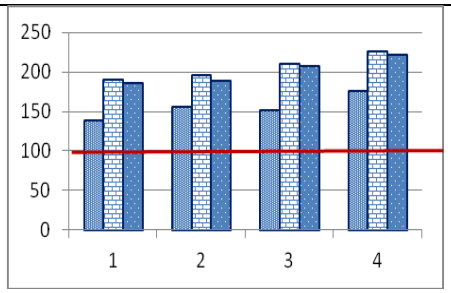
INCISORS AND CANINES PREMOLARS

PMP

PSP

Note: the numerator is in the group of the teeth the number in the denominator - in the group teeth to the number in % relative to; from treatment previous to value relative to º - P ≤; from treatment next to value relative to ^ - P ≤

1 – intact tooth

2 – spot stage and surface caries



100% - intact tooth

3 - from treatment before treatment then 1 month ago from the periodontium after average caries

4 – from treatment after deep caries

Table 4.3.3

General periodontitis traditional treatment to vital pulp in dynamics have of the teeth microcirculation of the index dynamics.

(M±m)

Localization	Intact teeth	Caries		
		Surface	Medium	Deep
	Intact periodontal (control)			
Cutting and pile teeth	1.52±0.06	1.62±0.07	2.77±0.17	3.77±0.11
Premolars	1.93±0.11	2.44±0.09	3.73±0.12	5.62±0.24
Molars	2.33±0.11	2.83±0.13	4.02±0.19	7.77±0.35

PIP					
Incisors and canines n=28	Until treatment	1.62±0.08	1.87±0.07	4.28±0.25	6.85±0.23
	From treatment after	2.53±0.14º ^	2.97±0.15 º ^	5.65±0.21 º ^	7.26±0.22 º ^
	1 month later	1.64±0.06 º	1.72±0.08	2.85±0.11 º	3.83±0.13 º
Premolars n=2_5	Until treatment	2.23±0.09	2.93±0.13	4.28±0.21	6.60±0.20
	From treatment after	3.20±0.14 º ^	3.97±0.12 º ^	6.28±0.25 º ^	9.11±0.42 º ^
	1 month later	2.44±0.13 º	2.91±0.13 º	3.90±0.14 º	6.26±0.14 º
Molars n=28	Until treatment	2.53±0.11	3.41±0.16	5.67±0.21	9.84±0.32
	From treatment after	4.11±0.18 º ^	5.33±0.21 º ^	7.81±0.24 º ^	13.82±0.28 º ^
	1 month later	2.42±0.09 º	2.91±0.14 º	4.91±0.23º	8.08±0.35 º ^
PMP					
Incisors and	Until treatment	1.82±0.08 º	2.66±0.13 º	5.31±0.19 º	7.33±0.25 º

	From treatment after	1.70±0.07 º ^	2.44±0.12 º ^	4.45±0.22 º ^	6.52±0.26 º ^
	1 month later	1.41±0.05 º ^	1.52±0.07 º ^	2.20±0.10 º ^	2.36±0.08 º ^
Premolars n=28	Until treatment	2.62±0.12 º	4.41±0.16 º	6.14±0.24 º	11.02±0.47 º
	From treatment after	2.46±0.31 º ^	3.32±0.13 º ^	5.33±0.25 º ^	9.03±0.31 º ^
	1 month later	1.75±0.96 º ^	1.88±0.06 º ^	2.32±0.08 º ^	3.05±0.14 º ^
Molars n = 34	Until treatment	2.85±0.11 º	4.31±0.21 º	6.83±0.23 º	15.56±0.67 º
	From treatment after	2.48±0.12 º ^	3.08±0.14 º ^	5.21±0.19 º ^	9.22±0.31 º ^
	1 month later	2.02±0.08 º ^	2.33±0.11 º ^	2.82±0.13 º ^	4.67±0.18 º ^
PSP					
Incisors and canines n=39	Until treatment	1.03±0.05 º	1.08±0.03 º	1.42±0.07 º	1.52±0.05 º
	From treatment after	0.93±0.03 º ^	0.95±0.04 º ^	1.12±0.05 º ^	1.13±0.05 º ^

	1 month later	0.82±0.03 º ^	0.66±0.02 º ^	0.83±0.04 º ^	0.51±0.02 º ^
Premolars n=2 9	Until treatment	1.28±0.05 º	1.53±0.06 º	1.86±0.06 º	2.44±0.16 º
	From treatment after	1.06±0.04 º ^	0.98±0.04 º ^	1.31±0.06 º ^	1.68±0.08 º ^
	1 month later	0.82±0.03 º ^	0.92±0.04 º ^	0.95±0.03 º ^	0.98±0.04 º ^
Molars n = 37	Until treatment	1.53±0.07 º	1.68±0.07 º	2.02±0.05 º	3.05±0.11 º
	From treatment after	1.20±0.06 º ^	1.28±0.06 º ^	0.72±0.03 º ^	0.66±0.02 º ^
	1 month later	0.92±0.04 º ^	0.83±0.03 º ^	0.62±0.02 º ^	0.33±0.01 º ^

Note: º - P <0.05 compared to intact periodontal tooth; compared to the value before treatment ^ - P < 0.05.

In the treatment of periodontal diseases, the nature of the reaction of the microvessels of the dental pulp, as well as the time of recovery of hemodynamic parameters (Tables 4.3.3 and 4.3.4, Fig. 4.3.2) were studied

The study of the microhemodynamics of the pulp vessels after treatment with EDUP showed that the treatment of periodontitis leads to an increase in blood flow, the development of hyperemia in the pulp microcirculation, which It is recorded with an increase of the PM index by 66.43% - 110.32%;

however, 24.69 ± 4.79% of teeth retain normal values of the PM index (Table 4.3.3; Table 4.3.4 and Figure 4.3.2).

Examinations carried out one month after the treatment showed that after treatment with PIP, the changes in the dental pulp were restored: the microcirculation index in the pulp of 82.27 ± 4.19% of the teeth returned to normal values. , before and after treatment (R1≤0.05; P2≤0.05) (Table 4.3.3, Figure 4.3.2). So PIP treatment tooth in the pulp microcirculation violations to normalization take will come. From treatment after pulp inside of microcirculation increase, perhaps, hyperemia development and inflammation of the infiltrate average in quantity cells appear to be with depend Periodontal diseases pulp on top of it harmful effects as well as granules take to throw and decay products periodontal out of pocket pulp tissues fall as a result on the dentin surface of changes result to be can PMP to treatment in response pulp contained hemodynamics increases, which is 50.0 ± 4.95% increase in PM in teeth as noted (P≤0.05); It decreases at 39.22 ± 4.83% (P≤0.05). and normal microcirculation values have been of the teeth ratio up to 10.78 ± 3.07% decreases (P≤0.05). It was conducted 1 month after the treatment inspections PMP treatment as a result came out pulp microhemodynamic of diseases increase determined. Microhemodynamics decreased of the teeth compared to 59.80 ± 4.85% wt increased (P1≤0.05; P2≤0.05); and normal microcirculation with of the teeth comparison weight turn with 34.31 ± 4.70% (P1≤050.05; P2≤0.05) and up to 5.88 4.85% (R 1≤0.05; R 2≤ 0.05) decreased. (Table 4.3.4).

with PSP hurt in patients periodontitis from treatment after of MS in 95.24% of teeth decline note will be done and of the teeth only 1.90% MS levels are

in the normal range holding stands From treatment a month later , the tooth of the pulp microhemodynamics recovery face does not give (Table 4.3.4). Generalized periodontitis treatment stages tooth pulp in the situation changes based on learning, tooth pulp of the situation caries injuries to the stage dependence, periodontal of tissues status and average and severe periodontitis from treatment after this of disorders increase was determined. Vital teeth for the first time in the pulp microcirculation study anatomic localization looking done increased: vital of the teeth in the pulp microcirculation size intact to the periodontium have in the teeth as follows increases - cut and pile teeth - premolars and molars. With caries of damaged vital teeth in the pulp intact periodontium with note carious of injuries weight with increased going of microhemodynamics growth is being observed.

Table 4.3.4

Generalized periodontitis traditional treatment stages different microcirculation to indices have of the teeth to its own characteristics

Localization		Research period		
		From treatment before	From treatment after	1 month later
PIP , n=81	The norm	55/67.90±5.19	20/24.69±4.79	67/82.27±4.19
	From the normal high	25/30.86±5.13 º ^	61/75.31±4.79 º ^	14/17.28±4.19 º ^
	Below is normal	1/1.23±1.22	_	_

PMP , n=102	The norm	50/49.02±4.95	11/10.78 ± 3.07	6/5.88±2.33
	From the normal high	31/30.39±4.55 º ^	51/50.0±4.95º ^	35/34.31±4.70 º ^
	Below is normal	21/20.58 ±4.55 º	40/39.22±4.83 º	61/59.80±4.85 º
PSP , n = 105	The norm	15/14.28±3.11 º	2/1.19±1.33 º	2/1.90±1.33 º
	From the normal high	20/19.04±3.833 º ^	3/2.86±1.63 º ^	_
	Below is normal	70/66.67±2.16 º ^	100/95.24±2.08 º ^	103/98.10±1.33 º ^

Note: in the numerator - in the group teeth the number in the denominator - in the group teeth to the number in % relative to; from treatment previous to value relative to º - P ≤; from treatment next to value relative to ^ - P ≤.

First times tooth anatomical localization and with caries injuries to the stage looking, vital teeth in the pulp in periodontitis microcirculation level of violations was studied. Light level in periodontitis microcirculation of intensity increase pulp inflammation descriptive condition as assessment possible identified; periodontitis average and heavy degree with - in the pulp degenerative changes blood flow of intensity decline together will come.

First time, man tooth pulp in microcirculation of changes weight learning different difference in weight periodontitis in treatment was conducted. It is said that it is light periodontitis treatment the pulp exposure feature cause removes periodontitis treatment as a result come out in the pulp hyperemic

changes from treatment after one month inside will be stopped. PMP and PSP treatment basal pulp blood flow to subside takes comes, microcirculation slowing down from treatment after long lifetime during increases.

So with caries damage stage and of the periodontium inflammatory-destructive damage weight vital teeth of the pulp microcirculation violations big contribution adds Determined microcirculation disorders periodontitis treatment during get heavier and long lifetime stretches.

Pulp of the situation periodontitis to the weight dependence and periodontitis from treatment after this of diseases increase periodontal-pulpal and pulpo -periodontal mutual effects existence and their endodonto -periodontal of injuries in development pathogenetic connections confirms. Vital teeth pulp of microcirculation violation endodonto -periodontal injuries development from the clinic previous diagnostic sign as view can

Pulp situation check periodontal diseases from treatment before transfer need average and heavy common periodontitis with hurt patients treatment and rehabilitation to do according to measures complex periodontal-pulp of influence pathological the chain which stops methods own into take need.

Methodological approaches to early diagnosis and treatment of endodonto-periodontal injuries

Transferred studies based on periodontitis with hurt 3 types in patients tooth pulp cases was determined and their clinical and morphological interpretation given :

1. pulp is in normal functional condition;
2. average hyperemia;
3. strong hyperemia or pulp degeneration.

Complex studies as a result tooth localization and with caries injuries to the stage suitable respectively pulp inside functional of disorders each one type suitable incoming PEE and pulp microcirculation indicator values were determined (Table 4.4.1).

Table 4.4.1

Dental pulp functional situation electroodontometry and microcirculation indicators according to assessment, their clinical interpretation and medical tactics

Diagnosis	PEE , mk A			(MTs) MC , perforated unity			Clinical interpretation, medical tactics
	Tooth edges	Premolars	Molars	Tooth edges	Premolars	Molars	
spot stage intact	2.71	5.32	7,10	1.52	1.93	3.33	Vital pulp, periodontitis traditional treatment
surface caries	3.21	6.70	8,12	16.2	2.44	2.83	
medium caries	3.62	37.25	9.60	2.72	3.73	4.02	
deep caries	7.50	8.50	12.60	9.77	5.62	7.77	
spot stage intact	2.90	3.80	7.80	>1.62	>2.33	2.53	Average pulp hyperemia, periodontitis "Vector" system using possible until
surface caries	3.51	7.40	9.24	>1.83	>2.93	>3.41	
medium caries	4.0	8.0	10.50	>4.28	>6.28	>5.67	

deep caries	8.90	10.31	15,12	>7.33	>3.40	>15.0	harmless treatment
spot stage intact	>2.90	>3.80	>7.90	1,032	1,232	1.53	Strong hyperemia or pulp degeneracy , Vector system your periodontitis possible until harmless treatment
surface caries	>3.60	>7.50	>9.30	1,082	1.53<	1.68<	
medium caries	>4.0	>8.0	>10.5	2,332	2.83<	4.0<	
deep caries	>8.9	>10.31	>15.0	3.52	5.60 <	7.70<	

Endodonto -periodontal injuries appear of being to the clinical diagnosis according to methodical approaches based on

Periodontitis with hurt in patients pulp functional situation evaluation criteria and vital teeth pulp to the situation depends has been periodontitis of treatment medical tactics justification, endodonto -periodontal of injuries severe treatment difficult has been risk to reduce possibility given

Part 4. FUNCTIONAL STATUS OF VITAL DENTAL PULP IN THE DYNAMICS OF TREATMENT OF GENERAL PERIODONSIS USING THE "VECTOR" APPARATUS.

General periodontitis traditional of treatment pulp functional to the situation negative effect account received without, pathological periodontal -pulpal and pulpo -periodontal mutually effect non-developing and endodonto -periodontal of injuries development risk non-reducing methods search and current reach important "Vector" apparatus in tables 4.5.1 and 4.5.2 using common periodontitis from treatment after tooth of the pulp functional situation learning fast and long term results shown.

Table 4.5.1

General "Vector" apparatus for periodontitis with treatment dynamics of vital teeth electroodontometric indicators

Localization		intact tooth	Caries		
			Surface	Medium	Deep
		Intact periodontal (control)			
Cutting and pile teeth		2.71±0.10	3.21±0.14	3.62±0.17	7.51±0.31
Premolars		5.32±0.22	6.71±0.26	7.25±0.25	8.51±0.39
Molars		7.11±0.31	8.12±0.37	9.52±0.39	12.61±0.55
PIP					
Cutting and	Until treatment	2.94±0.12	3.53±0.17	4.06±0.13	8.89±0.23

	From treatment after	2.97±0.14º ^	3.63±0.18 º ^	4.18±0.19 º ^	8.97±0.32 º ^
	1 month later	2.82±0.12 º	3.26±0.14	3.53±0.18 º	7.56±0.21 º
Premolars n=2 5	Until treatment	5.75±0.23	7.28±0.26	8.14±0.31	10.25±0.29
	From treatment after	6.50±0.27 º ^	8.45±0.32 º ^	8.92±0.35 º ^	12.00±0.91 º ^
	1 month later	5.96±0.23 º	7.63±0.37 º	8.81±0.40 º	11.12±0.44 º
Molars n=28	Until treatment	7.45±0.12	8.99±0.39	10.51 ±0.35	15.09±0.67
	From treatment after	9.60±0.38 º ^	10.70±0.41 º ^	12.66±0.4 0º ^	18.88±0.78 º ^
	1 month later	8.15±0.32 º	9.25±0.34 º	11.42±0.6 5 º	16.39±0.65 º ^
PMP					
Cutting and pile teeth n=40	Until treatment	3.44±0.17 º	3.96±0.17 º	4.65±0.21 º	10.44±0.34 º
	From treatment after	3.30±0.15 º ^	4.00±0.17 º ^	4.55±0.21 º ^	10.52±0.25 º ^

	1 month later	2.91±0.12 º ^	3.50 ±0.16	3.73±0.15 º ^	9.20±0.35
Premolars n=2 8	Until treatment	6.44±0.25 º	8.11 ±0.33 º	9.39 ±0.41 º	12.00±0.45 º
	From treatment after	6.44±0.29 º ^	8.14±0.40 º ^	9.53±0.37 º ^	12.32±0.45 º ^
	1 month later	5.84±0.26 º ^	7.22±0.35 º ^	8.05±0.28 º ^	9.70±0.28 º ^
Molars n = 34	Until treatment	8.61±0.33 º	9.95±0.36 º	12.91±0.49 º	18.81±0.66 º
	From treatment after	9.00±0.41 º ^	10.03±0.48 º ^	12.90±0.79º ^	18.67±0.72 º ^
	1 month later	7.70 ±0.18 º ^	8.43±0.33 º ^	10.56±0.35º ^	14.25±0.63 º ^
PSP					
Cutting and pile teeth n=39	Until treatment	3.75±0.18 º	4.78±0.19 º	5.78±0.24	13.46±0.64 º
	From treatment after	3.88±0.17 º ^	4.84±0.21 º ^	5.44±0.23 º ^	13.58±0.55 º ^
	1 month later	3.11±0.11 º ^	3.58±0.28 º ^	4.00±0.18 º ^	8.90±0.32 º ^
Premol ars n=2	Until treatment	7.22 ±0.31 º	10.11±0.44 º	11.43±0.43 º	14.62±0.61 º

	From treatment after	7.50±0.43 º ^	10.75±0.42 º ^	11.70±0.53 º ^	14.72±0.49 º ^
	1 month later	6.61±0.21 º ^	7.66±0.34 º ^	8.00±0.24 º ^	9.95±0.32 º ^
Molars n= 37	Until treatment	9.83±0.39 º	12.62±0.45 º	14.41±0.53 º	22.11 ±0.63 º
	From treatment after	10.31±0.61 º ^	12.77±0.68 º ^	14.87±0.61 º ^	22.40±0.72 º ^
	1 month later	8.11±0.55 º ^	9.27±0.71 º ^	11.11 ±0.53 º ^	15.00±0.67 º ^

Note: º - P - 0.05 compared to a tooth with an intact periodontium; compared to the value before treatment ^ - P < 0.05.

General periodontitis treatment from the "Vector" apparatus using vital teeth of the pulp functional to the situation effect was not determined (Tables 4.5.1 and 4.5.2, Figures 4.5.1 and 4.5.2).

So from treatment after immediately electroodontometry and microcirculation indicators all studied tooth groups and with caries of injuries different stages from treatment before (P1≥0.05 and P2≥0.05) similar indicators with statistics in terms of important differences not (Tables 4.5.1 and 4.5). 2, Figures 4.5.1 and 4.5.2), of these vital teeth of the pulp functional parameters periodontitis of treatment negative effect that there is no shown.

The most interesting and clinical in terms of important results from treatment after a long time during vital teeth of the pulp functional situation in learning received.

From treatment next long term during the period it can be seen from Tables 4.5.1 and 4.5.2 and Figures 4.5.1 and 4.5.2 as the pulp functional situation recovery observed, with PIP and PMP hurt in patients more felt

Table 4.5.2

M unit (M ± m) "Vector" apparatus with common periodontitis treatment to vital pulp in dynamics have of the teeth microcirculation of the index dynamics.

Localization		Healthy teeth	Caries		
			Surface	Medium	Deep
		intact periodontal (control)			
Cutting and pile teeth		1.52±0.06	1.62±0.07	2.77±0.17	3.77±0.11
Premolars		1.93±0.11	2.44±0.09	3.73±0.12	5.62±0.24
Molars		2.33±0.11	2.83±0.13	4.02±0.19	7.77±0.35
PIP					
Cutting and pile teeth n=28	Until treatment	1.66±0.07	1.89±0.06	4.31±0.17	6.87±0.29
	From treatment after	1.68±0.06º ^	1.87±0.05 º ^	4.45±0.17 º ^	7.26±0.22 º ^

	1 month later	1.54±0.05 º	1.63±0.08	2.80±0.09 º	3.80±0.13 º
Premolars n=25	Until treatment	2.25±0.08	2.95 ±0.14	5.30±0.19	6.62±0.24
	From treatment after	2.30±0.11 º ^	2.97±0.13 º ^	5.32±0.15 º ^	6.31±0.22 º ^
	1 month later	1.94±0.07 º	2.51±0.11 º	3.80±0.12 º	5.72±0.15 º
Molars n=28	Until treatment	2.53±0.11	3.41±0.16	5.67±0.21	9.83±0.32
	From treatment after	2.61±0.12 º ^	3.43±0.11 º ^	5.71±0.24 º ^	9.85 ±0.38º ^
	1 month later	2.42±0.09 º	2.91±0.14 º	3.81±0.13 º	8.02±0.25 º ^
PMP					
Cutting and pile teeth n=40	Until treatment	1.83±0.07 º	2.64±0.11 º	5.35±0.17 º	7.31±0.31 º
	From treatment after	1.85±0.08 º ^	2.59±0.10 º ^	5.45±0.25 º ^	7.42±0.33 º ^
	1 month later	1.65±0.05 º ^	1.75±0.07 º ^	3.00±0.10 º ^	4.06±0.08 º ^
Premolars	Until treatment	2.64±0.10 º	4.44±0.21 º	6.17±0.22 º	11.00±0.35 º

	From treatment after	2.66±0.31 º ^	4.32±0.13 º ^	6.33±0.25 º ^	11.03±0.31º ^
	1 month later	2.05±0.07 º ^	2.71±0.11 º ^	3.92±0.08 º ^	6.05±0.21 º ^
Molars n = 34	Until treatment	2.87±0.12 º	4.33±0.19 º	6.85±0.15 º	15.60±0.57 º
	From treatment after	2.88±0.13 º ^	4.28±0.17 º +^	6.91±0.22 º ^	15.72±0.31º ^
	1 month later	2.52±0.08 º ^	3.18±0.11 º ^	4.32±0.15 º ^	7.67±0.18 º ^
PSP					
Cutting and pile teeth n=39	Until treatment	1.05±0.04 º	1.10±0.04 º	1.43±0.06 º	1.53±0.06 º
	From treatment after	1.03±0.04 º ^	1.05±0.03 º ^	1.42±0.06 º ^	1.53±0.05 º ^
	1 month later	1.22±0.06 º ^	1.36±0.02 º ^	2.13±0.09 º ^	3.11±0.12 º ^
Premolars n=2 9	Until treatment	1.27±0.05 º	1.55±0.07 º	1.87±0.06 º	2.42±0.12 º
	From treatment after	1.26±0.05 º ^	1.58±0.07 º ^	1.91±0.08 º ^	2.38±0.08 º ^

	1 month later	1.72±0.06 º ^	1.92±0.07 º ^	2.75±0.13 º ^	4.39±0.14 º ^
Molars n = 37	Until treatment	1.55±0.05 º	1.70±0.07 º	2.04±0.06 º	3.11±0.12 º
	From treatment after	1.60±0.06 º ^	1.68 ±0.07 º ^	2.02±0.09 º ^	3.16±0.02 º ^
	1 month later	1.92±0.08 º ^	2.13±0.06 º ^	2.42±0.11 º ^	4.33±0.13 º ^

Note: º - P < 0.05 compared to teeth with intact periodontium; compared to the value before treatment ^ - P < 0.05.

So and periodontitis from treatment a month later with PIP hurt in patients of the teeth electroodontometric parameters intact in the periodontium the same so caries level have had teeth with significant to differences have it's not been (P ≤ 0.05); of the teeth all PMP was in the groups in patients electroodontometry indexes from treatment previous to indicators relatively decreased (P≤0.05), intact of the periodontium belongs to 7.38% - 14.0% (P≥0.05) higher than their values; from treatment then there was PSP in patients of electroodontometry positive dynamics were also determined: PEE values intact 10.50% - 24.25% from the periodontium high has been from treatment previous vs. value (P≤0.05). significant level decrease - 24.25% (P≤0.05; P≥0.05).

"Vector" apparatus for periodontitis with treatment in dynamics pulp microcirculation indicator learning from treatment a month later, the pulp microcirculation normalization trend existence shown.

So and became PIP in patients microcirculation indexes intact of the periodontium belongs to values with significant level difference did not (P≥0.05); With PMP hurt in patients of microcirculation intact periodontium with significant (P≥0.05) differences did not happen to values significant level decline observed; and with PSP hurt in patients of microcirculation activation it was observed while pulp inside subsided blood flow exchange (Table 4.5.3, Figure 4.5.2).

Table 4.5.3

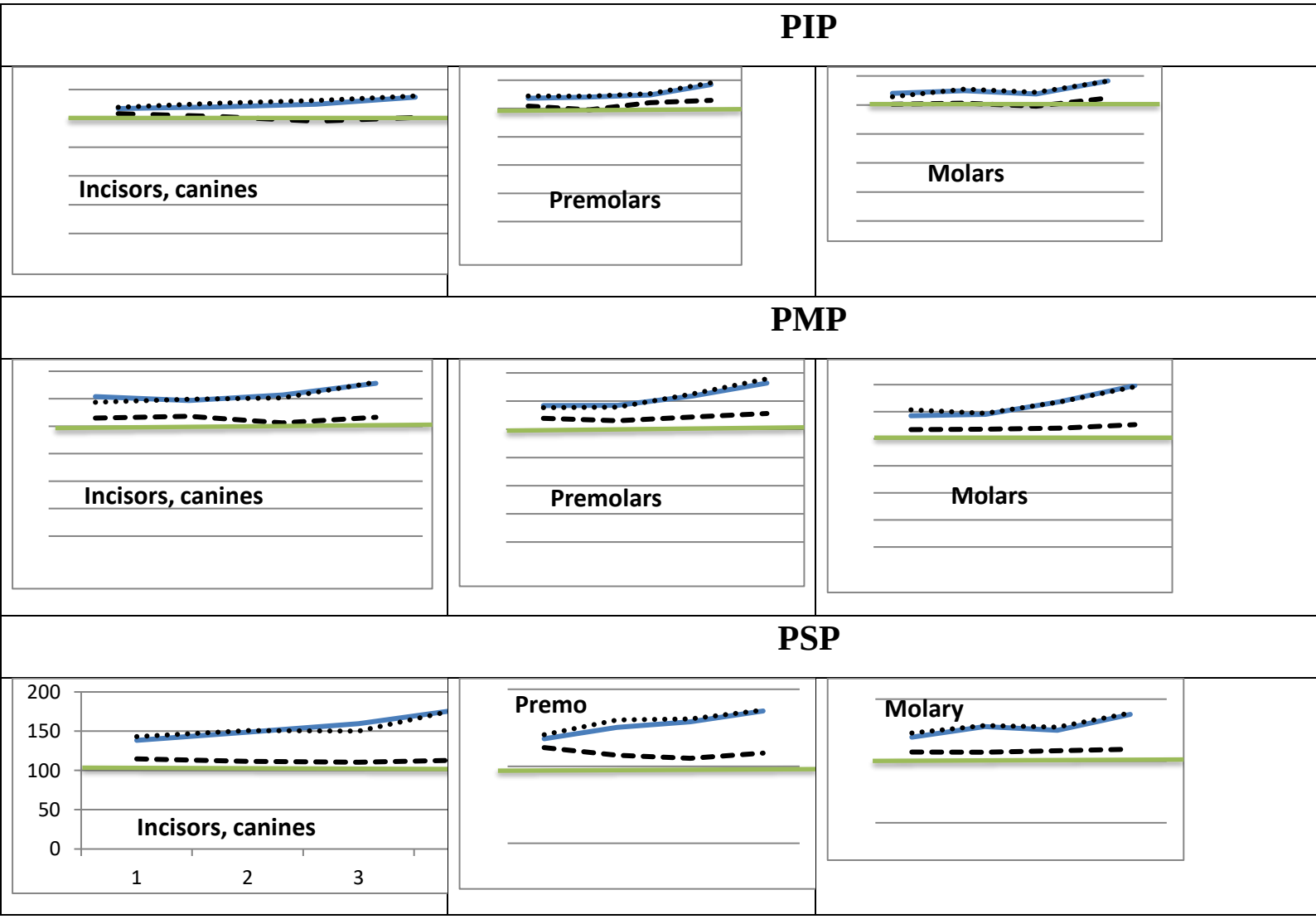
General "Vector" apparatus for periodontitis with treatment in dynamics different in different PEEs of the teeth indicators.

Degree	PEE , %	Research period		
		Until treatment	From treatment after	1 month later
PIP n=85	The norm	59/69.41±4.99	60/70.59±4.94	83/97.65±1.64º ×
	From the normal high	26/30.59±4.99	25/29.41±9.94	2/2.35±1.64 º ×
PMP n= 105	The norm	53/50.47±4.88	52/49.52±4.88	95/90.47±2.86 º ×
	From the normal high	52/49.52±4.88	53/50.47±4.88	10/9.52±2.86 º ×
	The norm	21/20.0±3.90	20/19.05±3.83	74/70.47±4.45 º ×

PSP n= 105	From the normal high	84/80.0±3.90	85/80.95±3.83	31/29.52±4.45 º ×

Note: in the numerator - teeth the number in the denominator is a tooth to the number in % relative to; from treatment previous to value relative to º - P <0.05; × - P < 0.05 from treatment next to value compared to

Vital teeth pulp functional status indicators a lot directional changes, as well as caries of injuries localization and to the stage looking of indicators to change account received without, PEE and of the MS different indicators with of the teeth to himself special indicators analysis.



Intact teeth		From treatment before
Surface caries		••• From treatment after
1. Medium caries		- - - 1 month after treatment
2. Deep caries		Intact periodontium, 100%

4.5.1. Picture . Electroodontometric parameters of the pulp of vital teeth at the stages of treatment of general periodontitis with the "Vector" device (in % compared to similarly diagnosed teeth in an intact periodontium

It can be seen from table 4.5.3 since, is vector therapy applied of the teeth PEE to the value of effect doesn't do it, that's it together with periodontitis with hurt in patients from treatment after normal PEE to the value of have been of the teeth ratio statistics in terms of significant level increased

Table 4.5.4

General " Vektor " apparatus for periodontitis with treatment in dynamics of microcirculation different in the indicators of the teeth to their own characteristics

UP , n	PM ,%	Research period		
		From treatment before	From treatment after	1 month later
PIP , n=85	The norm	58/68.24±5.05	59/69.41±4.99	84/98.82±1.17º ×

	From the normal high	26/30.59±4.99	16/30.59±4.99	1/1.17±1.70 º ×
	Below is normal	1/1.17±1.7	-	-
PMP , n = 105	The norm	51/48.57±4.88	52/49.52±4.88	80/76.19±4.16 º ×
	From the normal high	32/30.48±4.49	31/29.52±4.45	10/9.53±2.87 º ×
	Below is normal	22/20.95±3.95	22/20.95±3.97	15/14.29±3.41 º ×
PSP , n = 105	The norm	15/14.29±3.42	16/15.24±3.51	52/49.52±4.88º ×
	From the normal high	21/20.0±3.90	21/20.0±3.90	40/38.09±4.74 º ×
	Below is normal	69/65.71±4.63	68/36.19±4.68	13/12.38±3.21 º ×

Note: in the numerator - teeth number, in the denominator -% in the group teeth to the number relative to; from treatment previous to value relative to º - P <0.05; × - R < 0.05 from treatment next to value compared to

So with PIP hurt in patients from treatment one month after that, normal PEE to the value of having of the teeth the ratio is 97.65 ± 1.64% organize did, this from treatment before and after from indicators significant level high is suitable by 69.41 ± 1.64 % equal (P≤0.05); and 70.55 ± 4.44% (P≤

0.05); PMP patients suitable coming ratios to 90.47 ± 2.86% 49.52 ± 4.88% (P≤ 0.05) and 50.47 ± 4.88% (P≤ 0.05) respectively; and was PSP by 70.4 ± 4.45% in patients 20.00 ± 3.90% (P≤r0.05) and 19.05 ± 3.83% (P≤0.05) respectively.

It can be seen from table 4.5.4 as it is common periodontitis from treatment after normal pulp microcirculation has been of the teeth ratio significant level increased So by doing with PIP from treatment then, intact periodontium indexes with significant to differences have not happen pulp microcirculation has been of the teeth ratio up to 98.82 ± 1.17% grew , this from treatment before and after from indicators significant level high they are suitable 68.24 ± 5.05 % organize seven (P≤0.05) and 69.41 ± 4.99% (P ≤0.05); PMP patients that's it similar the ratios were 76.19 ± 4.16% and 48.57 ± 4.88% (P≤ 0.05) and 48.57 ± 4.88% (P≤ 0.05) organized did and was PSP in patients turn with 49.52 ± 4.88% and 14.29 ± 3.42% (P≤0.05) and 15.24 ± 3.51% (P≤0.05).

General periodontal injuries from treatment after tooth of the pulp functional situation recovery, treatment during tooth hard tissues (root and dentin) of damage minimum level fall and as well as periodontal of treatment effect with depend

So and periodontitis complex in treatment Vector ultrasound from the system use endodonto -periodontal of injuries development risk which determines events the chain stops.

4.1 CLINICAL STATE, MICROCIRCULATION AND IMMUNOMETABOLIC PROCESSES IN DIFFERENT INJURIES OF PERIODONTAL TISSUES. BASED ON THE METHOD OF TREATMENT OF ENDODONTO-PERIODONTAL INJURIES.

Periapical tissue injuries have different clinical characteristics of patients

Periodontal diseases treatment modern of dentistry priority duties is considered General periodontitis and endodonto -periodontal injuries in the background chronic apical periodontitis development pathogenetic mechanisms clinical similarity and unit diagnosis efficiency increase and enough treatment methods determination for differential diagnosis signs determination for their appearance of being pathogenetic mechanisms to learn makes it important.

Periodontal and periodontal tissue inflammation and destructive 3 types of diseases option periodontal tissue clinical status and local status indicators are presented in tables 5.1.1 and 5.1.2.

Processes to himself special feature inflammatory-destructive of injuries studied clinical characteristics different level in weight reflection reach was determined.

It can be seen from table 5.1.1 as it is complaints and clinical symptoms objective respectively periapical of tissues damage level and of the periodontium common damages reflection caused by: chronic apical of periodontitis complaints and clinical symptoms (group 1 patients) are common symptoms of periodontitis (group 2). together came and due to EPI (group 3 patients). teeth in the field of injuries maximum weight observed.

Diagnosis	Complaints	Lens research information	X-ray image
Group 1 Chronic apical periodontitis	None how complaint no. Be done during pain or light sensitivity no	Objective respectively of the teeth color o ' change , deep caries space , probing painless , painless percussion , cold oath to the heat reaction no . Your tooth in the void necrotic has changed pulp. Soft tissue small swelling and hyperemia.	Bone texture of destruction apical furnaces
Group 2 is chronic apical periodontitis + periodontitis	From the mouth bad breath, teeth in the wash bleeding conditions, paresthesia, pus, complaints about teeth property pain. The reason tooth around biting as a result a little	Devital pulp with cause teeth, painless, tooth in the space necrotic has changed pulp. Level II-III weight, periodontal pockets 4-5 mm deep common periodontitis presence, periodontal from pockets pus separation of teeth teeth property bleeding Exciter tooth in the field of, transition folds in the field gums swelling increases.	Bone texture of destruction apical foci + X-ray according to alveolar 1/3 of bone tissue, interdental ½ the height of the fence resorption

	efficiency sensitivity		
3rd group EPI	Teeth in the wash blood discharge, suppuration, irritant tooth in the field when bitten pain, trigger tooth in the field food of the remains stuck stay	Devital to the pulp have caused teeth Periapical of tissue damage signs; pain syndrome, transmission fold in the field tooth property swelling when bitten pain (percussion), trigger tooth in the field periodontal out of pocket pus separation.	alveolar aro obstacles destruction, periodontal of space expansion, trigger tooth in the field alveolar obstacle from the edge root to the top until bone tissues decay, root at the peak periapical of the furnace existence and / or furcation in the field decay root to the top goes

Table 5.1.1

Tissues different injuries clinical and X-ray features

X-ray information clinical the diagnosis objective respectively reflection .

Table 5.1.2

Periapical of tissues different different injuries have been in patients instigator tooth in the field periodontal of tissues local status

Diagnosis	S. Mullermann , 1975	E. Loe , 1964	Loe & S. Silness , 1962
Intact periodontium	0.15±0.005	0.14±0.02	0.33±0.001
S is excellent apical periodontitis	1.25±0.05	1.08±0.04	1.14±0.04
chronic apical periodontitis + p a rhodontitis	2.05 • Δ × ±0.09	2.15• Δ ×±0.10	2.26• Δ ×±0.07
EPI	2.35•±0.15	2.54•±0.16	2.53•±0.09

Note: intact periodontal to the teeth vs. • - p <0.05; Δ - p <0.05 compared to group 2; × - p< 0.05 compared to group 3.

Periodontal of tissues local injuries increase the following in fixed order: chronic apical periodontitis - chronic apical periodontitis + periodontitis - chronic apical periodontitis - periodontitis + EPI.

So , in patients of the 3rd group blood leave indicator S. Mullrrmann 2.35 ± 0.15 points organized did chronic apical periodontitis and common periodontitis with - 2.05 ± 0.09 ($p < 0.05$) points and chronic apical periodontitis 1.25 ± 0.05 ($p1 < 0.01$ and $p2 < 0.01$); inflammation intensity of the index suitable dynamics Loe & S. Silness 2.54 ± 0.16; 2.15 ± 0.10 ($p < 0.01$) and 1.08 ± 0.04 ($p1 < 0.01$ and $p2 < 0.01$); and periodontal in the crack local plaque indicator: 2.53 ± 0.09; 2.26 ± 0.07 ($p < 0.01$) and 1.14 ± 0.04 ($p1 < 0.01$ and $p2 < 0.01$).

Clinical and X-ray studies results clinical of characters microbiological, biochemical, microbiological disorders with mutual dependence yes mda periodontium and of the periodontium different in pathologies microcirculation situation learning for basis it has been.

Periapical tissues differ in injury cytokine profile

Current at the time chronic apical of periodontitis immunological aspects determined. Inflammation of the process chronic periapical tissues of the complex local immune system deficiency based on the fact that found in these cells mediated by immunological reactions plays an important role [74; b. 100-102].

Today's to the day until collected data periapical in tissues chronic of processes cytokine profile to the situation dependence reliable proves [61; 239 pp.].

Recently conducted studies of cytokines bone tissue recovery intermediary as importance dedicated being, this bone resorption with passing periapical of tissue damage for important [78; b. 56-57].

Apical in the periodontium chronic processes root of the channel aggressive factors and periapical of tissue protection forces between dynamics of the collision result as is considered.

This attitude with separable root canal and gingival fluid apical profile of assessment relevance marked.

This attitude with periapical of tissues different gingival fluid in lesions and root of the channel cytokine profile evaluation was conducted. Inflammation is destructive damage level wound of inflammation feature depends being

his important criteria one in the oven to inflammation inclined and to inflammation against of cytokines balance [41; p.544].

Inflammation is destructive damage level wounded of inflammation feature depends being his inflammation criteria one in the hearth to inflammation inclined and to inflammation against of cytokines balance [74; p.100-102].

Table 5.2.1

Periapical of tissues different different injuries have been in patients mouth liquid and root on the channel of cytokines content (pg /ml)

Diagnosis	Inclined to inflammation		Against inflammation	
	TNF -a	IL -6	IL -4	IL -10
Gingival liquid				
Intact periodontal control	23.62±1.08	13.82±0.62	15.77±0.70	17.69±0.61
Group 1, Chronic apical periodontitis	44.32▪ ±1.72	28,41▪ ±1.21	11.2▪ 3±0.42	12.63▪ ±0.60
group 2, Chronic apical periodontitis + periodontitis	66.88▪× ±3.05	54.25▪× ±1.63	9.02▪× ±0.36	9.03▪× ±0.39
3 groups, EPI	70.02▪×O ±2.53	61.75▪×O ±2.03	7,95▪×O ±0.25	8.74▪×O ±0.30

Root channel				
Group 1, Chronic apical periodontitis	52,62▪ ±2.03	62,31▪ ±2.65	10.25▪ ±0.40	10.58▪ ±0.32
group 2, Chronic apical periodontitis + periodontitis	180.21▪× ±6.52	128.52▪× ±1.33	5.03▪× ±0.18	8.81▪× ±0.31
3 groups, EPI	231.17▪×^{O} ±5.83	184.32▪×^{O} ±6.51	3.47▪×^{O} ±0.12	5.95▪×^{O} ±0.21

Note: intact to the periodontium vs. ▪ - $p<0.05$; × - $p<0.05$ compared to group 1; ^{O} - $p< 0.05$ compared to group 2.

As you know, left- handed indicators local odontogenic of inflammation to change directly reflection makes Research from the purpose come out, mouth in liquid and instigator of the teeth root from the channel on the way out cytokines level was studied.

Table 5.2.1. periapical of tissues to the situation looking being studied biological in liquid cytokines concentration dynamics about information present is enough

It can be seen from table 5.2.1 as TNF-a and IL-6 to inflammation against of intermediaries initial composition clinical from the diagnosis strict look, mouth liquid and root of the channel in release normal from the degree much high was So so chronic apical periodontitis with pain of patients' mouth in

liquid (group 1) level of TNF-a increased by 1.88 times; IL-6 - 2.06 times; to inflammation against of intermediaries suitable decreasing IL-4 from 0 to 1.40 times and 1.40 times than IL-10. Chronic apical periodontitis with pain in patients, the same as in the 2nd group similar dynamics, cytokines balance broken, in general determined periodontitis note made: TNF-α increased 2.83 times; and IL-6 - 3.83 times; That's it together, ML-4 by 1.7 times and ID-10 - by 1.96 times decreased; of cytokines maximum the imbalance was EPI in patients (group 3) it was determined: TNF-α increased by 2.96 times; IL-6 4.47 times; IL-4, on the contrary, 1.98 times and IL-10 - 2.02 times.

Root channel contained of cytokines dynamics analysis to do cytokines balance sharp growth showed that inflammation enhancer of intermediaries significant level spreading with dependent

Obviously, local damage in the hearth macrophage monocytic system activates and a lot in quantity to inflammation against of intermediaries uncontrolled release begins, this is "cytokine explosion" the meaning means Apparently as this mechanism periapical of tissues damage center in formation lies

Periapical of tissues damage level increase cytokine balance increase together passed.

So and TNF- α in patients of group 1 compared to control increased to 2.07 times; In group 2 already 7.63 times and 3 times - 2.8 times; the corresponding IL-6 increase is 4.51 times organized 9.30 times and 13.34 times; and to inflammation against intermediaries suitable decrease of IL-4 - by 1.54 times; 3.14 times and 4.54 times; and IL-10 - 1.67 times; 2.01 times and 2.97 times (Table 5.2.1 and Figure 5.2.1).

Cytokine system (cytokine network) is an intermediary and inflammation activities done increase and inflammation processes in order to manage put processes [55; p.35-37].

To inflammation against IL-6 infection and to trauma in response inflammation in development plays a main role and each how inflammation level of IL-6 in the process increases.

Note that it is necessary that TNF- a of excess work release contagious the process hidden from the situation clinical appearances to the stage transition during him of activation main mechanisms is one TNF- a of the amount increase of osteoclasts activation because of bone resorption strengthens

To inflammation against interleukin IL-4 is high in II type of sensitivity important role plays, antibodies harvest to be stops inflammation against cytokines (TNF- a and IFN- g) synthesis suppresses

To inflammation IO-10 against inflammation against cytokines excess synthesis stops (IL-1 b , IL-6, IL-8, TNF- a and others). This cytokine the body from infection protection to do mechanisms as a result surface coming hyperinflammation and of tissues from damage protection does

Periapical in the region chronic inflammation process development by means of local level to inflammation inclined and to inflammation against intermediaries work in release disorders degenerative of processes to increase help to give can

Cytokine in regulation deviations periapical of tissues chronic injuries and forecast reflection makes :

periapical of tissues injury in development of cytokines enough level Synthesis is undoubtedly periapical get hurt bone structures harm deliver factor is

Cytokine of the network status and of cytokines balance (proportion) basically periapical of tissues damage level and weight determines

Periapical of tissues different in injuries periodontal pathogen role of microflora

Periodontitis treatment problem currently being remains because odontogenic of infection chronic periapical furnaces internal organs and a person of the body focal reason diseases appear to be help will give.

Pulp death when microorganisms tooth root channel along, lateral and dentinal tubes across spreading to periodontal tissues enter and then inflammation to change cause releases

Current at the time periodontal tissue diseases in development etiological factor leading pathogen microorganisms the fact that proved [33; p.34-37]. This of the family the most aggressive representatives **Aggregate character actinomycetevcomitanss (Aa), Porphyromonas gingivalis (Pg), Fuzobacterium nucleatum (Fn), Prevonella intermedia (Pi), Tannerella forsythia (Bacteroidas forsythus) (Tf), Treponema denticola (Td)** is considered

Periodontal your pocket microbial name and root canal in the middle periodonto-endodontal pathology in existence correlation established. Antenatal periodontium in damage their role shown. At one time in itself one in the tube one how many pathogens to determine possibility giving using multi- peroxy enough level etiotropic treatment to appoint help will give.

This attitude with this of research purpose periapical of tissues different difference in injuries periodontal pathogen of microorganisms appear to be frequency evaluation was Periodontal of pathogens different in associations

appear to be frequency analysis to do that's it shown that it is chronic apical periodontitis with in 15 / 26.66 ± 5.71 patients root channels in the composition periodontal pathogen microflora there is; common periodontitis in the background chronic apical periodontitis with in 38 / 61.29 ± 6.18 patients with pain and with EPI in 68 / 90.66 ± 3.35 patients with pain (Table 5.3.1).

Table 5.3.1

Periapical tissues of different individual periodontal lesions pathogens determination frequency

Periodontal pathogens	Control, intact periodontal n = 20	Chronic apical periodontitis, n = 60	Chronic apical periodontitis + periodontitis n=62	EPI n = 75
Periodontal pocket				
Ah	2/20.0±8.54	12/20.0±5.16	22/35.48±6.08	38/50.66±5.77 ▪ o
Pi	1/10.0±6.71	10/16.67±4.81	25/40.32±6.23▪	32/47.68±5.71 ▪ o
Nf	2/20.0±8.94	2/3.33±3.23	30/48.39±6.35▪	36/48.0±5.77 ▪ o
Td	-	15/25.0±5.60 ▪	40/64.52±6.08▪	51/68.0±5.39 ▪ o
Pg	1/10.0±6.71	8/13.33±4.39	25/40.32±6.23▪	37/79.33±5.77 ▪ o

Everything	2/10.0±6.71	29/48.33±6.45	60/96.77±2.25▪	75/100±00 ▪ O
Root channel				
Ah	-	6/10.0±3.87	12/19.35±5.02	16/21.33±4.73
Pi	2/20.0±8.94	10/16.67±4.81	18/29.03±5.76	24/32.0±5.39
Nf	-	-	16/25.81±5.56	20/26.67±5.10 ▪
Td	1/10.0±6.71	8/13.33±4.39	20/32.26±5.94	32/42.67±5.71 ▪
Pg	1/10.0±6.71	11/18.33±5.00	18/29.03±5.76	24/32.0±5.39
Everything	2/10.0±6.71	15/26.66±5.71	38/61.29±6.18	68/90.66±3.35▪O ∨

Note: intact to the periodontium vs. ▪ - p< 0.05; O-p<0.05 compared to group 1; ∨ -p<0.05 compared to group 2.

Learned periodontal pathogen species among chronic apical periodontitis with hurt patients determination frequency of A. actinomycetevcomitanss - 6.0 / 10.0 ± 3.87 patients; Prevonella intermedia - 10 / 16.15 ± 4.67 patients; N. forsythia not found; T. Denticola - in 8/13.33 ± 4.39 patients and R. Gingivalis - in 8/13.33 ± 4.39 patients; common periodontitis in the background chronic apical periodontitis with pain in patients belongs to determination level 12 / 19.35 ± 5.02; 18 / 29.03 ± 5.76; 16 / 25.81 ± 5.56; 20 / 32.26 ± 5.94 and 18 / 29.03 ± 5.76; and was EPI in patients turn with

16 / 21.33 ± 4.73; 24 / 32.0 ± 5.39; 20 / 26.67 ± 5.10; 32 / 42.67 ± 5.71 and 24 / 32.0 ± 5.39 patients (Table 5.3.1).

Microbial colonies analysis do (table 5.3.1) that showed that it is chronic apical 1 or 2 representatives in periodontitis colonies periodontal in the pocket 10 / 16.67 ± 4.30 and 15 / 25.0 ± 5.60 cases were separated more occurs; 3 3 in the patient representative found (3 / 5.0 ± 2.81%).

In patients common periodontitis existence periodontal pathogens of the spectrum significant level expansion take came So periodontitis with hurt in patients 3 parodontopathogens in isolated 37 / 59.68 ± 6.23 cases and 2 periodontal in 24 / 38.71 ± 6.19 patients representatives of microorganisms found

Periodontal pathology development for important has been periodontal pathogen microflora periodontal pocket in the composition chronic apical periodontitis with in 29 / 48.33 ± 6.45 patients, chronic in 60 / 96.77 ± 2.25% apical periodontitis with hurt in patients common periodontitis there is and was EPI in 75/100 ± 00% of patients.

Note that should be periodontal in his pocket periodontal pathogen of microorganisms representatives determination frequency is also initial to the diagnosis depends was Chronic apical A. actinomycetevcomitans in periodontitis the determination frequency 12 / 20.0 ± 5.16% of patients ; Pr. Intermediate - 10 / 16.67 ± 4.81% of patients; N. forsythia - in 42 / 3.33 ± 2.32% of patients; T. Denticola - 15 / 25.0 ± 5.60% of patients and P. gingivalis - 8 / 13.33 ± 4.39% of patients; common periodontitis in the background chronic apical periodontitis with pain in patients belongs to determination rates 22 / 35.48 ± 6.08 % organized did 25 / 40.32 ± 6.23%; 30 / 48.39 ± 6.35%; 40 / 64.52 ± 6.08% and 25 / 40.32 ± 6.23%; and was

EPI in patients turn with 38 / 50.66 ± 5.77%; 32 / 47.68 ± 5.71%; 36 / 48.0 ± 5.77%; 51 / 68.0 ± 5.39% and 37 / 79.33 ± 5.77% (Table 5.3.1).

Intact of the periodontium in the tooth -gum gap pathogen microorganisms a small number of patients in the composition and very little found

Note that periodontitis with sick in patients 97.77 ± 2.25% - 100.0% of cases periodontal pathogen microflora found

Periapical of tissues different injuries with root channels in release periodontal pathogens appear of being frequency comparative analysis we spent

3 microorganisms in EPI patients already in 50 / 66.67 ± 5.44% of patients and 25 / 33.33 ± 5.44% - in 2 microorganisms found

Chronic apical periodontitis with hurt in patients root on the channel 2 microorganisms that are separated only in 6/10 ± 3.87% of patients found common periodontitis with determined of microorganisms spectrum much wider was : 20 / 32.66 ± 5.93% of 3 microorganisms in patients associations found 2 - 18 / 29.03 M 5.76% and 1 periodontopathogenic - 10 / 16.13 ± 467% of patients; in EPI patients suitable coming determination level 42 / 55.0 ± 5.73 % organized did 25/33.33 ± 5.44% and 1/1.33 ± 1.32% of patients (Table 5.3.2).

So it was EPI in patients microbiological landscape determination of frequency increase and periodontal pathogen of microorganisms of the spectrum expansion towards will change. Periapical region and root canal system own into received long term chronic inflammation process protection of forces to subside and microbial of aggression to increase take will come.

Table 5.3.2

Periapical of tissues different in injuries periodontal pathogens of the colony appear to be frequent

Diagnosis	In the colonies average periodontopathogens the number			
	0	1	2	3
Periodontal pocket				
intact periodontium, n=20	18/90.0±6.70	2/10.0±6.70	-	-
1 group , n=60 Apical periodontitis,	31/51.67±6.45	10/16.67±4.30	15/25.0±5.60	3/5.0±2.81
2 groups, n=62 Apical periodontitis + periodontitis	-	1/1.61±1.60	24/38.71±6.19	37/59.68±6.23
3 groups , n = 75 EPI	-	-	25/33.33±5.44▪	50/66.67±5.44 ▪ o
Root channel				

Intact periodontium, n=20	18/90.0±6.70	2/10.0±6.70	-	-
1 group , n=60 Apical periodontitis,	45/75.0±5.60	9/15.0±4.61	6.0/10.0±3.87	-
2 groups, n=62 Apical periodontitis + periodontitis	24/38.71±6.19	10/16.15±4.67	18/29.03±5.76	20/32.26±5.93
3 groups , n = 75 EPI	7/9.33±3.36	1/1.33±1.32	25/33.33±5.44 ▪	42/56.0±5.73 ▪ ^{O} ∨

Note: intact to the periodontium vs. ▪ -p <0.05; ^{O}-p <0.05 compared to group 1; ∨ -p <0.05 compared to group 2.

Periodontal pathogen microorganisms periapical in the region register transition processes shows negative effect. Periapical in the region inflammation process root on the channel bacteria number increase together will come.

EPI was in patients microbe situation learning of injury weight to evaluate and treatment efficiency control to do help will give.

So , the root of the channel in the composition periodontal pathogen of microflora high (90.16 ± 3.86%) prevalence and Planting 100% isolated from PP these microorganisms in the pathogenesis of EPI plays an important role.

Periapical tissue injuries have occurred in patients with periodontal microcirculation status.

Blood veins factor periodontal diseases in the background surface periodontal diseases in pathogenesis leader of the factors one is recognized as , because microcirculation system of the disease initial stages pathological tissue in reactions attends.

Microcirculation system status periapical of tissues trophic reflection will make it inflammation in the process sure to violations take came

of the LDF studied parameters learning of patients all in groups sure shows microcirculation violation. Initial to the diagnosis depending on different microcirculation in disorders expressed periodontal of tissues blood supply control deterioration presence was determined. In Doppler imaging damage in the field capillary blood flow level control to the group relatively significant decline observed. This is especially true against the background of periodontitis (group 2). endodontic-periodontal in injuries (group 3) and chronic apical in periodontitis it is felt.

So so chronic apical integral index of PM microcirculation in periodontitis control group decreased by 12.03% ($p > 0.05$); periodontitis in the background chronic apical periodontitis with pain in patients - 21.69% ($p < 0.05$) and had EPI in patients - 31.19% ($p < 0.01$); s of belongs to dynamics - 11.70% ($p > 0.05$); 21.93% ($p < 0.01$) and 38.30% ($p < 0.01$); Kv variation of the coefficient the decrease is equal to 9.18% ($p > 0.05$); 19.91% ($p <$

0.05) and 34.54% (p < 0.01); and in the flexmotion (IFM) index suitable a drop of 8.98% organized reached (p> 0.05); 20.51% (p < 0.05) and 31.41% (p < 0.05) and 31.41% (p < 0.01) (Table 5.4.1 and Figure 5.4.1).

So , periapical of tissues different injuries have been in patients doppler information comparative analysis capillary blood flow level shows significant decrease.

LDF-gram amplitude-frequency spectrum analysis in doing microcirculation blood flow of management active and passive in mechanisms significant differences were determined. However, it is more specific in the 3rd group of patients (EPI lesions). disorders and minimum in group 1 (chronic periodontitis) was determined.

So , in patients of the 1st group endothelial cells activity (A a / PM • 100%) control to the group decreased by 12.52% (p> 0.05); in group 2 - 21.69% (p <0.05) and in group 3 - 31.19% (p <0.05); myogenic fluctuations of activity suitable respectively decrease of 11.70% organized reached (p> 0.05); 21.93% (p < 0.05) and 38.3% (p < 0.01); heart hit speed activity is similar decrease of 9.2% organization reached (p> 0.05); 19.91% (p < 0.05) and 34.54% (p < 0.01); and breath get rhythms turn with 8.97% (p> 0.05); 20.51% (p < 0.05) and 31.41% (p < 0.05) (Table 5.4.2 and Figure 5.4.1).

So , periapical of tissues microcirculation status blood of flow active and passive modulation systems work of voltage decline in the background microcirculation of activity decline with is described.

Apparently as periapical in tissues damaged patients check functional diagnosis methods using done. Doppler laser flow measure method using pathological in the oven blood rotation essence in detail analysis to do periapical of tissues trophic situation and of disorders weight level to

evaluate possibility will give. Exciter of the teeth periodontal tissues microcirculation information clinical and X-ray studies the results evaluation efficiency to increase the possibility will give.

Table 5.4.1

Periapical of tissues different injuries have been in patients microcirculation indexes

Pointer	Control, intact periodontium and periodontium	Group 1 Chronic periodontitis n = 60	Group 2 Chronic periodontitis + periodontitis n=62	3 - group EPI n = 75
M, unity	17.89±0.81	15.65±0.55▪	14.01±0.47▪^	12.31±0.52▪^O
s, unity	3.42±0.3	3.02±0.12▪	2.67±0.10▪^	2.11±0.08 ▪^O
Kv , in %	16.88±0.65	15.33±0.61▪	13.52±0.58▪^	11.05±0.36 ▪^O
IFM, units	1.56±0.06	1.42±0.03▪	1.24±0.03▪^	1.07±0.04 ▪^O

Note: intact to the periodontium vs. ▪ - $p<0.05$; Compared to group 1 ^ - $p<0.05$; ^{O}- $p<0.05$ compared to group 2.

Table 5.4.2

Periapical of tissues different different injuries have been in patients active and passive blood of flow mechanisms - $P < 0.05$ yes relatively

Pointer	Control, intact	Group 1	Group 2	3 - group EPI

		periodontium and periodontium	Chronic periodontitis n = 60	Chronic periodontitis + periodontitis n=62	n = 75
Active mechanisms	Aa/ (PM) PM •100%	11.25±0.40	10.62±0.42	8.58±0.36 ▪^	6.38±0.29 ▪^O
	Aa/ (PM) PM •100%	8.10±0.35	7.11±0.33 ▪	6.31±0.25 ▪^	5.18±0.16 ▪^O
Passive mechanisms	A CF / (PM) PM •100%	14.77±0.62	12.62±0.55 ▪	11.20±0.44 ▪	9.31±0.41 ▪^O
	A HL / (PM) PM •100%	8.33±0.38	7.77±0.29	7.18±0.35 ▪	5.36±0.18 ▪^O

Note: intact to the periodontium vs. ▪ - p<0.05; Compared to group 1 ^ - p <0.05; O- p <0.05 compared to group 2.

EPI was of microcirculation in patients (group 3). deeper violation periodontium and in endodontics high level inflammation and decay shows.

Combined pathology defines determined characteristic diagnostic characters him of treatment special methods work exit for basis being service does In periodontium clinical and inflammation processes in development oxidative stress and compensatory of processes prevention in getting microcirculation plays main role.

Periapical tissues differ in their shiasts development in pathogenesis prooxidant-antioxidant system of factors role

Periapical tissue pathological processes are one of the current problems in dentistry [13].

Clinical of appearance polymorphism of the problem relevance cause releases In this case, periapical of tissues different different injuries diagnoses one different it's not.

in EPI pathological of the process to himself special feature endodontic and of the periodontium joint damage and dental-alveolar of the channel secondary in infection lies

So EPI is pulpo -periodontal contact in the system compensatory-adaptive reactions broken endodontic and in the periodontium functional and morphological changes as a result of clinical symptoms is complex.

Endodonto -periodontal complex in the tissues structural and functional changes by nature to itself special did not happen and low molecular weight in weight compounds and of proteins free radical oxidation of processes increase at the expense of done is increased [24].

A characteristic feature of the pathological process in EPI is related to the preservation of the infectious-toxic content in the pulpo-dentinal tubules.

periodontium periodontium.

In-depth study of the pathogenesis of EPI requires the search for new methods of studying and evaluating the severity of morpho-structural disorders.

In this regard, to a certain extent, it is of particular importance to evaluate the parameters of the free radical processes of the oral fluid and the separating root canal, which characterize the state of the adaptive mechanisms of the periodontal complex to the harmful effects of pathogenic agents.

In connection with the above, the state of prooxidant-oxidizing balance in various injuries of periapical tissues was evaluated and its diagnostic value was determined.

It was found that the processes of lipid peroxidation in both studied biological fluids worsened with the increase in decay processes in periodontal tissues.

Thus, the level of Dk in the oral fluid of patients with chronic apical periodontitis (group 1) increased by 16.67% ($p < 0.05$); Tk - by 16.28% ($p < 0.05$); SHA - by 29.01% ($p < 0.01$); MDA - by 16.3% ($p < 0.05$); Appropriate dynamics of LPO products in group 2: 35.71% ($p < 0.01$); 27.91% ($p < 0.01$); 54.84% ($p < 0.01$) and 45.34% ($p < 0.01$); and 45.54% in group 3 (patients with EPI), respectively ($p < 0.01$); 39.54% ($p < 0.01$); 67.74% ($p < 0.01$) and 48.61% ($p < 0.01$).

Table 5.5.1

Periapical of tissues different injuries have been in patients biological of AOT enzymes in liq activity

Diagnosis	CT Mkat , min	SOD E/ min	GP E/ min

Mouth liquid			
Intact periodontium	28.11±1.32	7.02±0.31	215.31±10.11
1 group Chronic a pical periodontitis	20.32±1.00▪	6.00±0.25▪	200.22±9.20
2 groups Chronic apical periodontitis + periodontitis	16.02±0.61▪^	5.41±0.14▪	155.31±7.11▪^{O}
3 groups EPI	15.22±0.42▪^	5.16±0.15▪^{O}	142.62±5.11▪^{O}
Root channel			
Intact periodontium	26.39±1.11	7.12±0.28	220.35±9.28
1 group Chronic a pical periodontitis	20.52±0.92▪	5.81±0.21▪	180.88▪
2 groups Chronic apical periodontitis + periodontitis	14.31±0.53▪^	4.02±0.16▪^	130.36±5.36▪^
3 groups EPI	12.28±0.42▪^^{O}	3.31±0.15▪^^{O}	109.36±3.82▪^^{O}

Note: intact to the periodontium vs. ▪ - $p<0.05$; Compared to group 1 ^ - $p<0.05$; ^{O}- $p<0.05$ compared to group 2.

Table 5.5.2

Periapical of tissues different injuries have been in patients biological of LPO processes in liq intensity

Diagnosis	Isopropanol in the environment day conjugates (Dc), triene conjugates (Tc) and pituitary gland basics (SHA), conventional units			MDK M k mol / l
	Dk	T k	SHA	

Mouth liquid				
Intact periodontium, control	1.12±0.04	0.43±0.02	0.03±0.001	3.97±0.12
1 group Chronic apical periodontitis	1.40±0.06▪	0.50±0.02▪	0.04±0.001▪	4.62±0.18▪
2 groups Chronic apical periodontitis + periodontitis	1.52±0.07▪	0.55±0.02▪	0.048±0.002▪	5.77±0.15▪
3 groups EPI	1.63±0.05▪^	0.60±0.02▪^	0.052±0.002▪^	5.90±0.16▪^
Root channel				
Intact periodontium, control	1.16±0.03	0.45±0.03	0.030±0.001	3.87±0.13
1 group Chronic apical periodontitis	1.32±0.04▪	0.52±0.02▪	0.036±0.001▪	4.32±0.14▪
2 groups Chronic apical periodontitis + periodontitis	1.65±0.05▪^	0.77±0.03▪^	0.056±0.002▪^	7.20±0.26▪
3 groups EPI	1.79±0.05▪^	0.80±0.02▪^	0.66±0.002▪^o	7.80±0.27▪^

Note: intact to the periodontium vs. ▪ - $p<0.05$; ^- $p<0.05$ compared to group 1; ^{o}- $p<0.05$ compared to group 2.

Periapical of tissues different injuries for root canal in the partition (intact of LPMs increase in the background antagonize of AOT enzymes decline observed. Activity of AOT enzymes in the 1st group of patients (chronic

apical periodontitis) decreased by CT by 27.71% ($p < 0.05$); SOD - by 14.53% ($p < 0.05$) and GP - by 7.01% ($p > 0.05$); common of periodontitis presence (group 2) AOT enzymes of activity more decline with together came So , CT activity decreased by 43.01% ($p < 0.01$); SOD - by 22.97% ($p < 0.05$); GT - by 27.87% ($p < 0.05$); and was EPI in patients this decline maximum at the level - up to 45.69% ($p < 0.05$); 26.50% ($p < 0.05$); and suitable 33.76% ($p < 0.01$) respectively (Table 5.5.1; Figure 5.5.2 and Figure 5.5.1).

Note that it is necessary that LPO-AOT processes similar dynamics root channel in the allocation observed.

So , in the 1st group of patients (chronic apical periodontitis) of LPO products growth as follows: Dk - by 13.79% ($p < 0.05$); Tk - by 15.56% ($p < 0.05$); SHA - by 20.0% ($p < 0.05$); MDA - by 11.62% ($p > 0.05$); of LPO products of group 2 belongs to growth of 42.24% organized ($p < 0.01$); 71.11% ($p < 0.01$); 86.67% ($p < 0.01$) and 86.05% ($p < 0.01$); and turn in group 3 with 54.31% ($p < 0.01$); 74.78% ($p < 0.01$); 100% ($p < 0.001$) and 101.55% ($p < 0.001$).

AOT enzymes decrease in LPO products to increase. So chronic apical with periodontitis CT activity decreased by 22.24% in group 1 of patients ($p < 0.05$); SOD - by 20.63% ($p < 0.05$); HT - by 17.92% ($p < 0.05$).

enzymes of group 2 belong to decrease of 45.77% organized ($p < 0.01$); 45.08% ($p < 0.01$); 40.84% ($p < 0.01$); and turn in group 3 with 53.47% ($p < 0.01$); 54.78% ($p < 0.01$); 50.3% ($p < 0.01$) (Table 5.5.1 and 5.5.2, Figure 5.5.1).

LPO-AOT system indicators work analysis to do periapical to tissues harm deliver level increase with LPO-AOT processes growth shown.

Received results homeostasis indicators (LPO-AOT system) periapical in tissue processes of transfer diagnostic importance shows that diagnosis according to new approaches to determine the development of EPI early recognition possibility will give.

4.2 CLINICAL EFFICIENCY THERAPY OF ENDODONTO - PERIODONTAL COMPLEX INJURIES.

Endodontic treatment indicators objectivity and instigator tooth in the field periodontium situation confirmation for of the jaw opposite on the side cause and intact teeth in the field periodontal of tissues local situation comparative evaluation was conducted.

Studies as a result periapical marginal periodontium of the focus to the situation negative effect detected: trigger teeth in the region of the periodontium inflammatory-destructive damage index indicators ($P<0.05$) of intact ones from the value increased went Exciter marginal periodontal teeth in the situation intergroup differences not (Table 5.6.1).

Table 5.6.1

Endodontic-periodontal injuries have been in patients local periodontal the situation comparative evaluation

Group	Tooth, Follow up period	S. Mullermann , 1975	S. Loe , 1964	Zoe & Silness , 1962
Intact		0.15 ± 0.005	0.14 ± 0.02	0.33 ± 0.001
1	before treatment	1.32 ± 0.05*	1.34 ± 0.05*	1.33 ± 0.06*

	after treatment	1.03±0.04* ^	0.92±0.03* ^	0.88±0.02* ^
2	before treatment	1.36±0.05*	1.35±0.04*	1.32±0.05*
	after treatment	0.62±0.02* ^	0.65±0.01* ^	0.53±0.02* ^
3	before treatment	1.34 ± 0.06*	1.33 ± 0.05*	1.35 ± 0.04*
	after treatment	0.34 ± 0.01*	0.35 ± 0.01*	0.37 ± 0.02

Note: intact to the tooth relative to * - R ≤ 0.05; ^ - R≤ 0.05 compared to group 3.

Complex treatment instigator of the teeth periodontitis local inflammatory-destructive the process significant level to be relieved took came: blood leave decreased, inflammation events decreased and hygiene status improved. Implemented complex treatment in periodontics inflammation process to soften and root channel to clean help gave Patients clinical status significant level improved , periodontium inflammation of the reaction decline or not being leaving note done , periodontal pockets Entirely decreased or not being gone , periodontal from pockets blood leave and pain feelings decreased

All compared marginal periodontium in groups local status indicators significant level (P < 0.05) from treatment before belongs to from the values increased went

From treatment after instigator marginal periodontal teeth situation index in assessment intergroup differences was determined. With that together, maximum in group 3 clinical efficiency found out that on the ground EPI

complex Vector device in treatment used, and in group 1, periodontal treatment Metrogyl denta with done increased

From immediately after treatment Vector from the hardware when using (group 1) local periodontal condition indicators intact of the teeth belongs to with indicators (P> 0.05). statistics in terms of importance to differences have it's not and groups 1 and 2 belong to from the values significantly low level (P < 0.001). So blood leaving of the index value (Salex & Müllermann , 1975) from treatment in group 3 then groups 1 and 2 are suitable 202.94% (P < 0.001) and 82.35% (P < 0.001) were lower than their values; inflammation of the dental papilla similar to the index ratio (Löe & Silness , 1963) 155.56% (P < 0.001) and 80.56% (P < 0.001) and tooth plaque index (Silness & Löe , 1964) is 137.84% (P < 0.001) and 43.24% (P < 0.01) (Table 5.6.1).

Endodonto -periodontal injuries have occurred in patients periodontal pathogen microorganisms in loss complex of therapy efficiency

Studies from treatment before and after were conducted. Periodontal on discharge all in patients endodonto -periodontal injuries treatment from the beginning before conducted inspections results as shown , all in patients endodonto -periodontal injuries treatment from the beginning before conducted inspections in the results as shown , periodontal your pocket on discharge the most a lot 5 periodontal pathogen of microorganisms DNA found Usually , 3-4 or 5 periodontal pathogen of microorganisms colonies found With that together , it is known one periodontal of pathogens appear to be the frequency is from 44.0% to 62.96 % was (Table 5.7 .1).

This in 66.67%-72.0% of cases periodontal pockets in cleaning endodonto - periodontal injuries has been in patients periodontal pathogen of bacteria His DNA was also determined while one from the side endodontic and of the periodontium anatomical and functional connections reflection causes - endodontic pathology in development periodontal of pathogens shows pathogenetic role. With that together, individual periodontal pathogens determination frequency is from 16.0% to 32.0% has been and intergroup differences no was Undoubtedly, this category of patients therapeutic events root channel and periodontal your pocket sanitation provide need

From treatment after periodontal pathogenic microorganisms determination of frequency comparative analysis groups in the middle significant differences determined. So from PP of the 1st group detachable (metrogil - from denta use) parodontopathogens determination frequency is 64.28% organized became (decrease 1.56 times); In group 2 (ozonized physiological solution) - 46.15% (decrease 2.17 times) and in group 3 (Vector hardware) - 12.5% (decrease 87.5 times).

Treatment all types with periodontal pathogen of microflora separately representatives determination frequency is also significant level decreased From this except if individual periodontopathogens in group 1 determination frequency by 1.33 - 2.0 times decreased, then 2 - 1.83 - 4.31 times, 3 - 5.0 times organize again until (Table 5.7.1)

Table 5.7.1

Periodontal pathogens different treatment in methods determination frequencies

Group	Research period	Periodontal pathogens	
		Total	Separately types

			AA	R.	Nf	Td	Pg
Periodontal pocket allocations							
1 n=25	before treatment	25/100	12/48.0 ±10.0	10/44.0	11/44.0	17/62.96 ± 5.65	12/48.0 ±10.0
	after treatment	18/64,28 ± ±9.67	6/24.0 ±8.27	7/28.0 ±8.80	8/32 .0 ±9.15	8/32 .0 ±9.3	9/36.0 ±9.41
2 n=26	before treatment	26/100.0	13/50.0 ±10.0	11/42,31 ±9.42	12/46,15	16/61.54 ±9.78	11/42,31 ±9.69
	after treatment	12/46,15 ± 9.78	6/23,08 ± 8.26	6/23,08 ±8 , 26	5/19,23 ± 7.73	4/14,29 ± 6.86	6/23,08 ± 8.26
3 n = 24	before treatment	24/100.0	12/50.0 ± 10.0	11/45.83 ± 10.17	12/50.0 ± 10.20	15/62.50 ± 9.88	11/45.83 ± 10.17
	after treatment	3/12.5 ± 6.75	-	1/4,16 ± 4.08	-	1/4,16 ± 4.08	1/4,16 ± 4.08
Root chanel							
1 n=25	before treatment	17/68.6 ± 9.37	4/16.0 ± 7.33	6/24.0 ± 8.54	5/20.0 ± 8.99	8/32.0 ± 9.34	6/24.0 ± 8.54

	after treatment	8/32.0 ± 19.15	2/8.0 ± 5.42	1/4.0 ± 3.84	3/12.0 ± 6.49	4/16.0 ± 7.33	2/8.0 ± 5.42
2 n=26	before treatment	18/72.0 ± 8.80	5/19,23 ± 7.73	5/19,23 ± 7.73	6/23,08 ± 8.26	7/26,92 ± 8.11	5/19,23 ± 7.73
	after treatment	6/23,08 ± 8.26	1/3.85 ± 3.77	1/3.85 ± 2.77	2/7.70 ± 5.26	1/3.85 ± 3.77	1/3.85 ± 3.77
3 n = 24	before treatment	16/66,67 ± 9.62	4/16.67 ± 7.60	5/20.83 ± 8.29	5/20.83 ± 8.29	6/25.0 ± 17.71	5/20.83 ± 8.29
	after treatment	1/4,17 ± 4.08	-	1/4,17 ± 4.08	-	-	-

Note: in the numerator - determination frequency; in the denominator in the group treated teeth in % of the number

"Vector" device with treatment of the disease main the reason not to do directed: hard layers, teeth plaque, endotoxins, plaques, biofilm consecutively and contactless respectively take thrown away, bacteria is neutralized, that's it together not only tooth surface cleans, maybe soft smooth. PP again organize reach with one periodontal of tissue inflammation and its surface coming possible has been complications no will be done. From the device "Vector". use periodontal pockets efficient and thrifty 11 mm deep in mode gives treatment possibility, traditional of

methods when using while periodontal pockets again work the depth does not exceed 5 mm.

PP sanitation with one in line root in the channels periodontal pathogenic microorganisms determination in frequency significant decline observed: in group 1 - 2.12 times; 2 - 3.13 times and 3 - 15.99 times. With that together, separable root individual periodontopathogens in the canal determination frequency in group 1 by 2.0 - 8.0 times decreased; 2 - 5.0 - 7.0 times; and in group 3 - 5.0 times sanitation to the situation .

Root in group 3 channels of sanitation such high the effect, first of all, of the vector apparatus periodontal diseases in treatment high clinical efficiency with dependence.

In periodontics chronic destructive furnaces and root on the channel periodontal pathogens existence combined endodonto -periodontal injuries complex to treatment Vector ultrasound hardware input periodontal of pockets inflammation hearths no to do , from them periodontal pathogen microorganisms maximum level no to do and As a result root of the channel to take sanitation will come.

Periodontal pathogens no of doing high effect periodontal pocket curettage of doing classic to the procedure special has been periodontal in tissues unwanted injuries and tooth hard parts loss because of possible it has been.

Endodonto - treatment of periodontal injures in dynamics root chanal and mouth of liquid cytokines

Research during EPI has been in patients mouth liquid and root channel in allocations main to inflammation cause of means high quantity and to inflammation against of intermediaries decrease found out that cell Th-1 connection of immunity of activity increased and immunity of the reaction

imbalance is showing and one from the side of the periodontium destructive inflammation injuries developed shows, secondly - endodontic damage of the hearth existence about

Note that must be the root on the channel to inflammation cause of cytokines level in their mouth in liquid 2.96-3.27 times the concentration high, to inflammation against of cytokines level while suitable was 1.43-2.30 times lower (Table 5.8.1) .

Table 5.8.1

Treatment in dynamics mouth liquid and root of the channel cytokines

Group	Follow up period	To cause inflammation		Against inflammation	
		TNF - a	IL -6	IL -4	IL -10
Mouth liquid					
Intact periodontium		23.62 ± 1.08	13.82 ± 0.62	15.77 ± 0.70	17.69 ± 0.61
1	From treatment before	70.62 ± 3.11*	61.31 ± 2.52*	7.85 ± 0.35*	8.62 ± 0.23*
	From D after	39.42 ± 1.65^	21.44 ± 1.08 ^	11.44 ± 0.50 ^	14.24 ± 0.48 ^
2	From treatment before	70.08 ± 2.58*	61.85 ± 3.01*	7.91 ± 0.29*	8.71 ± 0.40*
	From D after	32.63 ± 1.41 ^	15.21 ± 0.63 ^	12.42 ± 0.61 ^	15.44 ± 0.65 ^

3	From treatment before	69.81 ± 3.07*	62.11 ± 2.77*	8.02 ± 0.38*	8.77 ± 0.37*
	From D after	25.31 ± 1.13	14.52 ± 0.71	15.23 ± 0.44	17.25 ± 0.59
Root canal					
1	From treatment before	230.62 ± 10.32	181.34 ± 7.53	3.42 ± 0.01	5.81 ± 0.02
	From D after	53.61 ± 2.51 ^	40.55 ± 1.78 ^	8.61 ± 0.39 ^	12.31 ± 0.60 ^
2	From treatment before	231.42 ± 9.83	188.02 ± 9.62	3.51 ± 0.13	5.97 ± 0.02
	From D after	48.42 ± 1.83 ^	20.41 ± 0.88 ^	10.72 ± 0.52 ^	15.52 ± 0.71 ^
3	From treatment before	232.08 ± 11.08	183.52 ± 6.81	3.44 ± 0.01	6.01 ± 0.02
	From D after	24.62 ± 1.03	14.01 ± 0.68	16.11 ± 0.62	17.72 ± 0.73

Note: intact to the periodontium relative to * - R; ^ - P ≤; In relation to the 3rd group.

Mouth liquid and root on the channel cytokines in concentration significant difference local endodontic of injuries activity and root channel in the system infectious-toxic of the composition increase with depends and

leukocytes and leukocytes with mutually effect provider glycoproteins - interleukins out sends, this while own in turn a lot in quantity inflammation intermediaries cause releases To inflammation against activity of cytokines (IL-4 and (IL-10). decline in the background to inflammation against cytokines (IL-6, (TNF-a) are harmful effect , periodontium and in endodontics self holding standing inflammation of the process development big contribution adds because this channel to the composition to the periodontium and back will return Root on the channel to inflammation cause and to inflammation against of cytokines more precisely imbalance which determines active infectious- toxic of the furnace existence With that together, the root channels sanitation to do problem and periodontal lesions of the marginal periodontium treatment is also the first in place stands

Clinical appearance normalization with one in line, studied both biological in liquid of cytokines balance restored: their indicators statistics in terms of significant level ($p < 0.05$) from treatment previous to value relatively comfortable in the direction difference did This process compared all in groups register held , but his manifestation to be level different was: to inflammation against of intermediaries decline and of increase maximum level with EPI sick patients complex to treatment when included (group 3). With that together, in patients of the 3rd group immunity of the situation studied parameters all values of intact periodontium indicators with significant to differences have not ($p> 0.05$).

Cytokine of the situation common positive dynamics with in their 2nd and 3rd groups from treatment next indicators statistics in terms of significant being remained ($p1 < 0.05$; $p2 < 0.05$), which is the focus of EPI and in the periodontium constant inflammatory-toxic reaction showing (Table 5.8.1)

Complex treatment in dynamics of microcirculation local status

The results analysis to do that's it showed that the trigger teeth in the gum tissues in the area microcirculation level intact to the periodontium and to him belongs to intact to the teeth relatively decreased.

5.9.1 - table

Treatment in the dynamics of microcirculation indicators

Group	Follow up period	M, perforated unity		s, perforated unity		K v v %		IFM, units	
		S abab tooth	Intact teeth	S abab tooth	Intact teeth	S abab tooth	Intact teeth	S abab tooth	Intact teeth
Intact periodontal (control)		17.89±0.82		3.42±0.13		16.88±0.65		1.56±0.06	
1	before treatment	12.25º c ±0.50	15.20 o ±0.63	2.12 º ch ±0.08	2.48 º ch ±0.11	11.11º ch ±0.44	13.42 ±0.60	1.05 º ch ±0.01	1.25 ±0.05
	after treatment	12.62º c ±0.44	15.81 o ±0.59	2.21 º ch ±0.20	2.81 º ch ±0.17	12.11º ch ±0.60	14.25 degrees ±0.58	1.13 º ch ±0.31	1.11 o ±0.04

2	before treatment before	12.11º ±0.48	15.27 º ±0.55	2.08 º ±0.11	2.51 º ±0.11	1 1 .09 º ±0.42	14.44 degrees ±0.66	1.04 º ±0.44	1.14 º ±0.09
	after treatment	13.81º c ±0.51	15.42 º c ±0.53	2.88 º ch ±0.11	3.02 º ±0.13	13.52 º ±0.63	15.00 ±0.41	1.22 º ±0.21	1.44 º ±0.66
3	before treatment before	12.21º ch ±0.48	15.28 º ±0.70	2.10 º ch ±0.08	2.50 º ch ±0.11	11.05º c ±0.42	13.40 degrees ±0.62	1.06 º ch ±0.34	1.27 º ±0.05
	after treatment	17.38 ^º ±2.81	17.42 ^º ±0.62	3.08 ^ º ±0.14	3.25 ^ º ±0.15	16.21 ^ º ±0.44	16.4 ^ º ±0.55	1.51 ^ º ±0.62	1.50 ^º ±0.07

Note: to control vs. χ - P < 0.05; Compared to group 1 ^ - P < 0.05; º - P <0.05 compared to group 2.

Microcirculation features capillary blood flow level suitable by 15% decline and was EPI 31.55% (P < 0.05) in teeth, blood flow of intensity suitable with a ratio of 27.5% and 38.30% P 0.05). described. , of microvessels vasomotor activity - 24.5% and 34.20% (P < 0.05) and flexmotion indices suitable by 20.05% and 32.70% (P < 0.05), respectively increased, this while high decrease shows in the field of EPI of tissues trophic, blood with tissue of perfusion decline and active inflammation and fatal process (Table 5.9.1).

As a result of the comparison analysis of LDF-gram amplitude-frequency indices, significant changes occurred in the hemodynamic mechanisms of tissue blood flow control in the EPI area. The contribution of endothelial cells to microcirculatory hemodynamics (A a / PM * 100%) decreased by 24.36% and 43.56%, respectively ($P < 0.05$); 22.20% decrease in the level of vasomatism (ALF / PM * 100%) in the gingival tissue in the area of intact teeth and 36.90% of the defect in the area of EPI ($P < 0.05$), which indicates a decrease in the active modulation of tissue blood flow is doing. (Table 5.9.2).

Table 5.9.2

Treatment in dynamics of active and passive blood flow mechanisms

Group	Follow up period	Active mechanisms				P passive mechanisms			
		Aa / (PM) PM * 100%		A LF / (PM) PM *100%		A CF / (M) M * 100%		A HL / (PM) PM *100%	
		S abab tooth	Intact teeth	S abab tooth	Intact teeth	S abab tooth	Intact teeth	S abab tooth	Intact teeth
Intact periodontium		11.25 ± 0.40		8.11 ± 0.35		14.77 ± 0.62		8.83 ± 0.38	
1 g of flour	From treatment before	6.35*^± 0.32*^	8.51 ± 0.43*	5.12*^± 0.25*^	6.31 ± 0.30*	9.32*^± 0.52*^	11.18 ± 0.51*	5.85*^± 0.25*^	7.19 ± 0.34*
	From treatment after	6.45*^χ± 0.31	8.53* ± 0.25	5.83*^χ± 0.23	6.82*	10.32*^χ± 0.43	11.85* ± 0.40	6.88*^	7.67*χ± 0.36

					± 0.28			± 0.28	
2 g of flour	From treatment before	6.40* ^ ± 0.29	8.62* ± 0.39	5.27* ^ ± 0.24	6.25 * ± 0.31	9.42* ^ ± 0.81	11.25 * ± 0.52	5.31* ^ ± 0.22	7.11* ± 0.32
	From treatment after	7.02* ^ ϰ ± 0.34	9.62* ± 0.42	6.11* ^ ч ± 0.25	7.32 * ± 0.29	11,21* ^ ch ± 0.47	12.62 * ± 0.31	7.40* ^ ch ± 0.33	7.88* ± 0.36
3 g of flour	From treatment before	6.37* ^ ± 0.28	8.55* ± 0.41	5.11* ^ ± 0.23	6.33 * ± 0.28	10.28* ^ ± 0.50	11.20 * ± 0.41	5.40 * ^ ± 0.22	7.20* ± 0.38
	From treatment after	10.51 ± 0.36	10.83 ± 0.40	7.62 ± 0.35	7.88 ± 0.39	13.81 ± 0.59	14.11 ± 0.62	8.11 ± 0.37	8.25 ± 0.40

Notes : Intact to the periodontium vs. * - P < 0.05; Intact to the tooth vs. ^ - P < 0.05; ч - P < 0.05 compared to group 3.

Intact in the gum tissue of the tooth high frequency fluctuations (AHF / PM * 100%) decreased by 18.57%, and EPI - by 33.75% (P < 0.05), which while intact tooth row with in comparison of tissues blood of flow passive of modulation decrease showing ; pulse of fluctuations suitable coming dynamics (ACF / PM * 100%) equal to 24.31% and 36.90% (P < 0.05), which venous congestion increase reflection made (Table 5.9.2).

So, in the gum tissues in the EPI area microcirculation system efficiency belongs to healthy teeth decreased by 12-21% compared to this in its EPI development pathogenetic role shows.

From treatment next microcirculation situation analysis in doing all studied in groups positive dynamics determined: from treatment previous value with in comparison of microcirculation integral index value - M increased, erythrocytes of flow vibrations - s , microvessels vasomotor activity increased - Kv , as well as in microvessels of tissues blood rotation significant level efficiency, blood flow of modulation hemodynamic indicators restored.

With that together with the VECTOR system complex to treatment when entered significant level high positive shifts identified: treatment from the end after, microcirculation in the 3rd group of characteristics most of them statistics in terms of significant level ($p < 0.05$) from treatment previous from indicators superior was also comparison of groups belonging to values ($p1 < 0.05$ and $P2 < 0.05$) (tables 5.9.1. and 5.9.2).

Dynamics of LPO-AOT processes in the complex treatment of endodontic-periodontal injuries

In patients with EPI, there is a significant increase in lipid peroxidation reactions, which occur against the background of a decrease in the activity of the main (AOZ) AOT enzymes - SOD, catalase, and glutathione peroxidase. In the compared groups, the dynamics of deterioration of LPO - AOD processes were the same: LPO indices with a high level of statistical

reliability (P < 0.01) exceeded the control values, and counter system indices were statistically significantly lower than the corresponding values of the intact periodontium (P < 0.01). In oral fluid, this excess was 44.65% (DK); 33.88% (TK); 62.50% (SHA) and 47.88% (MDA); and 58.93% respectively in removable root canal; 86.05%; 96.77% and 97.73%; (AOZ) the activity of AOD enzymes decreased by 45.50%, respectively (KT); 25.78% (SOD) and 29.20% (GP) and 56.17%; 52.56% and 46.12% (Tables 5.10.1 and 5.10.2).

Table 5.10.1

LPO processes of intensity treatment in the dynamics indicators

(M ± m)

Group	Follow up period	Diene conjugates (DK), in isopropanol triene conjugates (TK) and Schiff bases (SHA), conv . units			MDA mmol / l
		DK	TK	SHA	
Mouth liquid					
Intact periodontium		1.12±0.04	0.43±0.02	0.031±0.001	3.97±0.12
1	From treatment before	1.62±0.07*	0.58±0.02*	0.052 ± 0.002*	5.87 ± 0.29*
	From D after	1.32 ± 0.05* ^°	0.49 ± 0.02 ^°	0.046 ± 0.002* ^°	4.52 ± 0.21* ^°
2	From treatment before	1.64 ± 0.07*	0.61 ± 0.03*	0.051 ± 0.002*	5.92 ± 0.23*

	From D after	1.25 ± 0.06* ^°	0.46 ± 0.02 ^°	0.039 ± 0.001* ^°	4.23 ± 0.15* ^°
3	From treatment before	1.63 ± 0.07*	0.60 ± 0.03*	0.053 ± 0.002*	5.88 ± 0.26*
	From D after	1.15 ± 0.03 ^	0.44 ± 0.01 ^	0.034 ± 0.001 ^	4.03 ± 0.17 ^
Root channel					
1	From treatment before	1.78 ± 0.06	0.80 ± 0.03	0.06 ± 0.002	7.81 ± 0.26
	From D after	1.42 ± 0.05 ^°	0.61 ± 0.02 ^°	0.06 ± 0.002 ^°	7.81 ± 0.26 ^°
2	From treatment before	1.80 ± 0.07	0.79 ± 0.03	0.060 ± 0.002	7.77 ± 0.26
	From D after	1.36 ± 0.06 ^°	0.56 ± 0.02 ^°	0.042 ± 0.001 ^°	5.24 ± 0.15 ^°
3	From treatment before	1.79 ± 0.07	0.81 ± 0.04	0.059 ± 0.002	7.80 ± 0.27
	From D after	1.18 ± 0.04 ^	0.47 ± 0.02 ^	0.033 ± 0.001 ^	4.18 ± 0.17 ^

Note : Intact to the periodontium vs. * - $P < 0.05$; from treatment previous to value vs. ^ - $P < 0.05$; ° - $P < 0.05$ compared to group 3.

in LPO-AOT balance oxidizer phosphorylation of processes cell damage of membranes destabilization, prooxidant - antioxidant of the system mobile from the normal state of equilibrium to exit take will come. From this exception, the root on the channel of this process expressed a little bigger level (Tables 5.10.1 and 5.10.2). Determined changes each being studied biologically in liquid one bilaterally and, of course, mutually depends changes describes. With that together with EPI hurt in patients initial factor role of the periodontium main damage, endodontic the oven also plays can This category in patients periodontal diseases treatment, especially endodontic treatment in the background, veins and mouth in the space metabolic of diseases to normalization help giving because of very important This attitude requested in groups received the results comparative in terms of seeing exit interesting

Table 5.10.2

Treatment AOT enzyme activity in dynamics (M ± m)

Group	Follow up period	CT M Kat / min	SOD , E/ min	GP , E/ min
Mouth liquid				
Intact periodontium		28.11±1.32	7.02±0.31	205.31±10.11
1 group	From treatment before	15.32±0.65 x	5.21±0.22 x	145.42±6.08 x
	From D after	19.62±0.82 x •	5.62±0.24 x •	172.66±7.11 x •

2 groups	From treatment before	15.11±0.61 x	5.11±0.17 x	141.23±5.23 x
	From D after	22.41±1.02•	6.03±0.28•	291.32±8.71•
3 groups	From treatment before	14.98±0.65 x	5.24±0.14 x	143.17±6.73 x
	From D after	27.62±1.11• ^ o	7.01±0.26• ^ o	203.52±9.21• ^ o
Root channel				
1 group	From treatment before	12.32±0.52 x	3.33±0.14 x	110.63±7.62 x
	From D after	18.31±0.83 x •	5.02±0.24 x •	161.41±6.31 x •
2 groups	From treatment before	12.22±0.54 x	3.28±0.12 x	108.31±5.96 x
	From D after	20.11±0.42 x •	5.81±0.23 x •	180.25±9.03 •
3 groups	From treatment before	12.24±0.60 x	3.30±0.11 x	109.26±4.56 x
	From D after	24.42±1.03• ^ o	6.55±0.23• ^ o	199.11±8.05• ^ o

Note : Intact to the periodontium vs. x - P < 0.01; treatment to the value of vs. • - P < 0.05; Compared to group 1 ^ - P < 0.05; º - P <0.05 compared to group 2.

From treatment then, recommendation done treatment of schemes high efficiency identified: therapy under the influence of free radical reactions intensity decreased and studied both biological in the environment antioxidant activity increased

All in groups therapy effect under LPO's statistics in terms of significant decline and antagonize AOT enzymes of activity from treatment previous to value relatively increase was observed (P < 0.05). Pathological system structural from the parts one's normalization in another broken balance to restore take when it comes, intracanal to the environment and periodontal to tissues one of time like "mobiles" in itself mutually strengthening effect to show clearly From treatment after free radical processes normalization effect as follows: Group 3 > Group 2 > Group 1 (Tables 5.10.1 and 5.10.2).

4.3 COMPARATIVE EFFICIENCY EVALUATION OF THE VARIOUS TREATMENT METHODS.

EPI of treatment different methods efficiency about comparative datas (general acceptance to those who have been relative to) in tables 5.11.1 and 5.11.2 given.

Research from the results apparently as, Vector ultrasound from the system use of medicines big from the arsenal addition EPI native without use in the zone periodontal of tissues inflammation significant level to decrease take will come. in group 3 patients of inflammation clinical symptoms no to do deadlines comparison groups than much short was

with EPI sick patients complex to treatment Vector ultrasound system the introduction periodontal pockets efficient to microbes against to treatment possibility gives, periodontal of tissues update provides local protection mechanisms activates and encourages microcirculation. Vector ultrasound from the system of use important positive aspects one of these visits number significantly decrease in level (3-4 times). and periodontitis treatment for drug of means to use void is to do Periodontal pocket sanitation to do contagious factors root channels from the system efficient take to throw take will come and As a result cell immunity parameters high normalization note will be done.

Table 5.11.1

of periodontium local situation determiner indicators according to treatment different methods of influence efficiency comparative evaluation

Periodontium clinical status				
Indicators		1 group	2 groups	3 groups
S. Müllerman , 1975	A	21.97	54.41	74.63
	B		>42.47	>4.51
S. Loe , 1964	A	31.43	51.85	73.68
	B		>21.05	>40.32
Loe&Silness , 1962	A	33.83	59.85	96.65
	B		>27.95	>48.30
∑sr., %	A		>30.99	>47.71
Place	B	3	2	1
Microcirculation				
M, unity	A	3.02	5.78	29.75
	B		>31.36	>81.57

s, unity	A	4.73	38,46	46,67
	B		>78.10	>81.60
Kv , in %	A	9.00	21.91	46.70
	B		>47.77	>67,68
IMF ,%	A	7.62	16.67	42,45
	B		>37.26	>69.56
Aa/PM •100%	A	1.57	9.69	64.99
	B		>72.11	>95.28
ALF/ PM •100%	A	13.87	15.94	49.12
	B		>6.94	>55.96
ACF/ PM •100%	A	10.73	19.00	34,34
	B		>27.82	>52.39
AHF/PM •100%	A	20.10	39,36	50.19
	B		>32.39	>42.81
∑sr., %			>41.76	>68.36
Place		3	2	1

Note: A - from treatment previous to information relative efficiency in %; with the 1st group in comparison efficiency.

Table 5.11.2

Various treatment methods treatment efficiency defines to process effect comparative evaluation

Indicators	Mouth liquid			Root channel liquid		
	1 group	2 groups	3 groups	1 group	2 groups	3 groups
Periodontal pathogens						

AA	A	24.00	26.92	50.00	8.00	15.38	16.67
	B		>5.73	>32.54		>31.56	>35.14
Pi	A	16.00	19,23	41.83	20.00	15.38	16.66
	B		>9.16	>44.67		13.52 <	9.11
Nf	A	12.00	26.92	50.00	8.00	15.38	20.83
	B		>38.33	61.29		>35.56	>44.50
Td	A	30.96	47.25	58.34	16.0	23.08	25.0
	B		>20.82	>30.66		>18.12	>21.95
Pg	A	12.0	19,23	41.67	16.0	15.38	20.83
	B		>23.15	>55.28		1.98<	>13.11
∑ sr.%			>19.44	>44.88		>14.04	>21.12
Place		3	2	1	3	2	1
Cytokine profile							
TNF-a	A	4.18	53,44	63.74	76.75	78.97	89.39
	B		>13.70	>18.12		>1.43	>7.61
IL -6	A	65.03	75.41	76.62	77.64	89.14	92.37
	B		>7.39	>8.18		>6.90	8.66
IL -4	A	45.73	57.02	89,90	151.75	205.41	368.3
	B		>10.99	>32.57		>15.02	>41.69
IL -10	A	65.20	77.27	96.20	111.88	159.97	194.84
	B		>8.47	>19.46		>17.69	>13.61
∑ sr.%			>10.14	>19.58		>10.26	>17.88
Place							
Sistema POL – AOS							
DK	A	18.52	23.78	31.90	20,22	24.44	38.08

	B		>12.43	>26.54		>9.45	>26.85
TK	A	15.52	24.60	26.67	23.75	29.11	41.98
	B		>22.63	>26.43		>10.14	>27.73
SHA	A	13.04	23.53	35.85	18.69	20.00	35.60
	B		>28.68	>46.65		>3.39	>28.06
MDA	A	23.0	28.55	31.46	25.61	32.56	46,41
	B		>10.77	>14.10		>11.95	>29.16
CT	A	28.06	48,31	84.38	48.62	64.57	98.86
	B		>26.52	>50.09		14.09	>34.07
SOD	A	7.87	18.00	33.78	50.75	77.13	98.45
	B		>39.16	>62.21		>20.63	>32.00
GP	A	18.73	35,47	42.15	45.90	66.42	82.24
	B		>31.06	>38.48		>18.27	>28.36
∑ sr.%			>22.46	>37.79		>10.95	>29.46
Place		3	2	1	3	2	1

Note: A - from treatment before to information relative efficiency (in %); compared to group 1 efficiency (in %).

Vector from the system use and root channels ozone with sanitation with treatment own into with EPI received sick patients treatment mode not only stable therapeutic effect shows maybe remission period also increases the duration. So so long term research during the period (from 6 months then) in group 3 patients of local EPI lesions complaint and clinical signs are also local and common periodontal of injuries symptoms no was Such in the 2nd group of patients the number is 5 organized (19.23%); and group 1 has 11 people (44.0%). Vector system using EPI complex treatment also teeth of treatment long term to the results positive effect shown: 6 months after

treatment in group 3, unsatisfactory good quality of fillings lack of determined, this research in 3 (11.54%) patients of groups 2 and 7 (28.0% of patients of group 1), unsatisfactory good quality restorations were determined.

The clinical effectiveness of injectable ozone therapy in the treatment of periodontitis in patients with EP I significantly increased the effectiveness of using Metrogyl denta for this purpose.

It is impossible to evaluate the therapeutic complexes used in the treatment of EPI without analyzing the frequency of complications associated with endodontic treatment. The immediate results of the treatment showed that complaints of pain and discomfort in the area of the gums were reported by 7 (53.85%) patients of the 1st group; 5 (45.45%) patients in group 2 and only 2 (16.67%) patients in group 3, which is 3.23 and 2.72 times less than the number of immediate complications of endodontic treatment in groups 1 and 2.

When the VEKTOR system is turned on, the average overall effectiveness of improving the clinical condition of the periodontium increases by 47.71% over standard treatment and 30.49% over ozone therapy; the corresponding normalization of microcirculatory characteristics was -68.36% and -41.76% (Table 5.11.1).

Vector therapy is 44.88% higher than the standard treatment in terms of the efficiency of periodontopathogenic cleaning from periodontal pockets; and ozone therapy - by 19.44%; the proportions related to allocations in the root canal, respectively - by 21.21% and 14.04%; 19.46% - 10.14% and 17.88% - 10.26% respectively on the normalization of the cytokine profile and

37.79% - 22.46% on the restoration of the balance of LPO-AOT, respectively 29.46% - 10.85% .

Thus, Vector therapy is far superior to the standard method of EPI treatment, as well as multifunctional treatment such as ozone therapy.

The inclusion of the vector system in the complex treatment has a direct positive effect on the periodontal tissues involved in the pathological process and indirectly on the intracanal environment of the tooh.

CONCLUSION

Endodontic and periodontal lesions accompanied by inflammatory and destructive changes in the periodontium. In other words, the processes that occur during the development of microbial inflammation in the pulp or its surrounding tissues are called endodontic-periodontal injuries.

Often, the term "endodonto-periodontal damage" (EPI) is used in the literature to define the combination of complications of periodontitis and caries (pulpitis and periodontitis) in the region of the dontoalveolar segment. Thus, the endodontic-periodontal syndrome is a unique combination of several interrelated signs of pulpitis (periodontitis) and periodontitis, a set of symptoms united by a unit of pathogenesis. Apparently, disruption of the system of interaction between the periodontium and the endodont is one of the important pathogenetic features of this syndrome, in which the body cannot independently eliminate the pathological center (inflammation) both in the periodontium and in the endodont.

Endodonto -periodontal syndrome anatomically respectively two from the part consists of apical and was marginalized in the periodontium in inflammation itself manifestation does

With that along with the marginal periodontium tooth of the periodontium anatomical and functional of the complex element is own in turn apical periodontium another anatomical and functional complex - endodontic one is part of of these formations anatomical and physiological proximity and that's it with together, functional differentiation periodontal and periodontal inflammation of the endodont in the process complicated damage taking will come.

Infectious substances - microbes and toxins, inflammation system through veins system and from the periodontium to endodontic pipes the way through come in to go and vice versa of the disease to go worsens, forecast it gets worse and treatment complicates. And this is his in turn, this pathology complex in treatment teeth requires prosthetics [18; p.86]. Above of issues importance that is, periodontium, pulp and in the periodontium chronic inflammation odontogenic furnace as it is considered while own in turn chronic stomatogenic of the furnace structural element is considered

So endodonto -periodontal pathology not only current problem of dentistry, maybe tissue alteration formation mechanisms, inflammation from the pulp spread ways too requires learning.

Uzbekistan in the Republic endodonto -periodontal of injuries spreading and clinical of appearances features learning for us in the city of Samarkand dental in clinics to treatment appeal 326 people who did the patient in detail clinical from inspection we spent, that's it including periodontal diseases on 195 (58.88 ± 2.72%). and endodontic injuries treatment for 131 (141.18 ± 2.72%).

Clinical appearance in detail analysis make , of patients complaints , clinical and X-ray studies that's it showed that to the dentist-therapist going EPI occurs in patients of being frequency is 29.45 ± 2.52% organize does ; that's it including EPI endodontic in 18.46 ± 4.04% of cases to treatment appeal did in patients and in 45.80 ± 4.35% - periodontal diseases treatment for appeal did in patients found

With that together, endodontic diseases treatment for appeal did in patients only in 7 (3.60 ± 1.33%) cases doctors periodontal pocket that there is and peak and periodontal pocket in the middle common transition that there is;

own in turn, in 6 (4.58 ± 1.83%) patients periodontal diseases treatment with engaged in doctors tooth to the root elongated narrow long periodontal pocket noticed.

Diagnosis of EPI never when not set, complicated endodontic and periodontal treatment was not

Note that should be endodontic diseases with treated in patients we every different in weight of the periodontium inflammatory-destructive injuries we found out, dental patients among common periodontitis frequency is 71.78 ± 2.5% organized did With that together, periodontal of the disease heavy clinical signs did not happen in patients EPI determination frequency is 18.48 ± 4.04% organize did and periodontitis with hurt in patients this indicator is 33.76 ± 3.07%

Relationship establishment between EPI and periodontal disease development by calculating odds ratios. Periodontitis with rapid development of EPI in patients the probability is equal to 2.249. If the value of OR exceeds 1 , EPI is present periodontitis with direct dependence means this relationships statistics in terms of significant ($p \leq 0.05$).

So today in the day Uzbekistan in the Republic of dentistry current from problems one with this EP the sick treatment and rehabilitation is to do

With that together, there is official documents analysis to do that's it shows that the present in the day statistics system no: EPI occurs of being the frequency is also special to treatment has been needed too. It is inevitable respectively. The real need for EPI account received without him organize achieve, plan and optimal treatment effect does Modern with EPI under conditions sick to patients help optimization with depends solution not done problems there is.

EPI was to patients dental help situation evaluation him improvement according to Suggestions work exit for an expert evaluation method using done increased.

3 experts in research group, that's it including each one out of 10 people from the area expert participation did

Research the following conclusions to issue possibility gave:

Current at the time with EPI in the country the sick diagnosis and treatment for him has been the need account will receive and complete to treatment help giving scientific basis on system there is it's not.

EPI statistics to the list to get absence of EPI medical in institutions register with the transfer EPI the sick treatment organization in reaching to problems take comes, this kind of dental of help quality, efficiency and existence reduces.

Specialist grades and significance coefficients calculations according to EPI in treatment main problems are as follows:

Lack of information about EPI clinical manifestations, etiopathogenesis, treatment and forecasts

dentist therapists and periodontologists in the middle interdisciplinary mutual effect lack of diagnosis complexity;

lack of experienced experts and dentists for special preparation;

Within a narrow range of EPI treatment;

Periodontal disease pulp and apical to the periodontium effect today's until the day not enough studied and of scientists about this thoughts opposite. With that together, tooth task periodontium depends on the situation: tooth, cementum, periodontal ligament and alveolar bone. Researchers to his opinion according to periodontal inflammation pulp inside degenerative

processes provoke can be, for example, secondary of dentin appear to be attenuation, fibrosis, cell elements number decrease and of collagen resorption, this while when damaged pulp regeneration limits [13]. Periodontal in tissue inflammation process of the teeth to the pulp indicates a significant effect: II degree common periodontitis with non-refundable changes in the pulp found in 54.56% of teeth.

Periodontitis with pain in patients pulp contained of changes existence electricity excitability disorder, blood flow of intensity significant decline with determined, pulp physiological age chronological to the period much higher.

Periodontal of treatment itself second level pulp participation take coming can Tartars take throwing, curettage and flaps lateral channels or dentinal tubules opening facilitate it is possible while pulp to the disease take comes. Progressive periodontal disease pulp necrosis is possible.

In the existing literary sources, the authors do not take into account the structural characteristics of the pulp of single-rooted and multi-rooted teeth when describing the effect of periodontal diseases on the pulp of teeth, the effect of treatment of periodontal diseases on the pulp of vital teeth, the stage of caries dentin damage effect about data very little. No information was found on the dependence of the state of the pulp of vital teeth on the severity of periodontitis, as well as on the stage of the caries process.

Currently, despite the existence of a large amount of work, there is no information about the condition of teeth with viable pulp depending on the group of teeth and the primary diagnosis in patients with periodontitis.

In the treatment of periodontitis, the reaction of the pulp of vital teeth to medical manipulation is not taken into account; It is not based on medical

tactics to preserve the vitality of the dental pulp in patients with periodontitis. These studies are relevant for both theoretical and practical dentistry.

All of the above confirms the need to study possible pulp complications in the treatment of periodontitis. Taking into account the pathogenetic features of the formation of endodontic-periodontal pathology, we have a task not only to establish and formulate new principles of effective treatment, but also to develop prevention of EPI using a more harmless method of periodontal treatment.

Study of the functional state of the pulp of vital teeth from the point of view of electrical excitability and microcirculation .

The obtained results show that there is a relationship between the severity of inflammatory destructive damage to the periodontium and the structural and functional state of the pulp. With periodontitis, changes occur in the pulp tissues that create conditions for the development of inflammation and decrease the recovery processes, which leads to a decrease in the electrochemical threshold and a violation of the microcirculation processes.

An analysis of variance was performed to address the question of the degree of influence of periodontal disease severity and stage of the caries process on the pulp of vital teeth.

The severity of periodontitis and the stage of caries disease and their interaction explain the main part of the variance of PEE - 92.53%. Among the controlling factors, the severity of periodontal diseases has the greatest impact - 53.28%; and to a lesser extent - caries stage - 30.81%.

Periodontal diseases in treatment tooth of the pulp case, this of changes dynamics the most less studied from issues is one

This attitude with our vital teeth of the pulp functional situation different level periodontitis treatment in dynamics we learned

Light level common the presence of periodontitis (PIP). pulp inside functional disorders with together pass found out that while impressive feature as description possible; with PIP from treatment after pulp inside functional changes from treatment after within a month will be stopped. Medium weight level common periodontitis (PSP) and heavy level common periodontitis (PSP). treatment basal pulp blood of flow to change and his electricity of excitability to decrease take will come. Pulp inside disorders from treatment a lot of time without passing does not stop.

Pulp of the situation periodontitis to the weight dependence and periodontitis from treatment after this of diseases increase periodontal-pulpal and pulpo -periodontal mutual effects existence and their endodonto -periodontal of injuries in development pathogenetic connections confirms. Vital teeth pulp of microcirculation violation endodonto -periodontal injuries development from the clinic previous diagnostic sign as view can Pulp situation check periodontal diseases from treatment before transfer need average and heavy common periodontitis with hurt patients treatment and rehabilitation to do according to measures complex periodontal -pulp of influence pathological the chain which stops methods own into take need

Periodontal the disease in treatment endodonto -periodontal injuries appear of being prevention to get directed methodical approaches work developed

Transferred studies based on periodontitis with hurt 3 types in patients tooth pulp cases based on and their clinical and morphological interpretation given :

1. pulp is in normal functional condition;

2. average hyperemia;

3. strong hyperemia or pulp degeneration.

Complex studies as a result tooth localization and caries disease to the stage according to pulp inside functional of disorders each one type suitable incoming PEE and pulp microcirculation indexes values were determined.

"Vector" apparatus for periodontitis with of treatment clinical interpretation and medical of tactics justification pulp functional to the situation looking given

Vector vital teeth of therapy of the pulp functional to the situation positive effect identified: periodontitis from treatment after pulp is normal functional to the situation have been of the teeth ratio statistics in terms of significant level increased

So with PIP hurt in patients from treatment after one month , to the norma PMP patients suitable coming ratios 90.47 ± 2.86% versus 49.52 ± 4.88% (P≤0.05) and 50.47 ± 4.88% (P≤0.05); and was PSP 70.4 ± 4.45% and 20.0 ± 3.90% (P≤0.05) and 19.05 ± 3.83% (P≤0.05) in patients.

PIP from treatment then, intact periodontium indexes with significant to differences have not happened pulp microcirculation with of the teeth ratio up to 98.82 ± 1.17% grew, this from treatment before and after from indicators significant level high they are suitable 68.24 ± 5.05 % organized seven (P≤0.05) and 69.41 ± 4.99% (P≤0.05); Similar in PMP patients the ratios were 76.19 ± 4.16% and 48.57 ± 4.88% (P≤ 0.05) and 48.57 ± 4.88% (P≤ 0.05) organized did and was PSP in patients turn with 49.52 ± 4.88% and 14.29 ± 3.42% (P≤0.05) and 15.24 ± 3.51% (P≤0.05) were determined.

Dental pulp functional situation recovery device "Vector". with common periodontal injuries from treatment after tooth hard tissues (root and dentin)

to a minimum level of damage fall, as well as periodontal treatment more efficient the fact that was determined.

Periodontitis complex in treatment Vector ultrasound from the system use endodonto -periodontal of injuries development risk which determines events the chain stops.

Periodontitis and endodonto -periodontal injuries in the background chronic apical periodontitis development pathogenetic mechanisms unit and clinical unity differential diagnosis signs learning and enough treatment methods determination for their appearance of being pathogenetic mechanisms to learn current does

This to the goal reach for 3 groups of patients was built:

Group 1 - apical periodontitis with clinical diagnosis placed 60 patients;

Group 2 - II and III degrees in weight common periodontitis in the background chronic apical periodontitis with 62 sick patients;

Group 3 - endodontic-periodontal injuries 75 patients with

Clinical diagnosis studies information periapical of tissues selected of pathologies features suitable came

Periodontal of tissue local injuries weight the following in increasing order identified: chronic apical periodontitis, chronic apical periodontitis + periodontitis, endodontic - periodontal injuries.

periodontal tissues chronic processes present at the time root of the channel aggressive factors and periapical of tissues protection forces between dynamic collision as a result seeing coming out.

This attitude with gingival fluid and root of the channel cytokine profile was studied.

Under study biological in liquids to inflammation inclination and to inflammation against of intermediaries dynamics learning of inflammation hyperproduction ((FNO) TNF- a and IL-6) in excess work release and damage in the center to inflammation against (IL-10 and IL- 4) mediators to be suppressed shown.

with EPI hurt in patients much more precisely has been cytokine in regulation deviations, periapical of tissues chronic injuries to go and forecast determines and, of course, periapial damage structures harm deliverer factor is considered

Root channel allocations and in the gingival crevice periodontal pathogen microorganisms learning that's it showed that there was an EPI in patients microbiological landscape periodontal microorganisms determination of frequency to increase and of the spectrum expansion looking will change. Periapical region and root canal system own into received long term chronic inflammation process protection of forces to subside and microbial of aggression to increase take will come.

Periodontal pathogenic microorganisms periapical in the region in order put of processes development shows negative effect. Periapical in the region inflammation process root on the channel bacteria number increase together will come.

EPI was in patients microbial the situation learning of injury weight to evaluate and treatment efficiency control to do help will give.

Root of the channel in the composition periodontal pathogen of microflora high (90.66 ± 3.86%) prevalence and periodontal from their pockets separated 100% loss of microbes in the pathogenesis of EPI play important role.

Periapical of tissues different injuries have been in patients doppler information comparative analysis capillary blood flow level showed a significant decrease.

LDF - grams amplitude-frequency spectrum analysis in doing blood flow of management active and passive mechanisms in terms of significant differences ($p < 0.05$) were obtained. From this exception, EPI was in patients significant disorders were determined.

Periapical of tissues microcirculation status blood of flow active and passive modulation system work of intensity decline in the background microcirculation activity with described.

Endodonto -periodontal complex in the tissues morphostructure of violations weight evaluation for mouth liquid and root channels in the system free radical of processes indicators was evaluated.

LPO-AOT system situation analysis to do periapical to tissues harm deliver level increase with each both biological lipid peroxidation in fluid as well as processes increase found that it is LPO products significant increase in level ($p < 0.05$). and against AOT enzymes decline with is expressed.

Immune-metabolic parameters, microcirculation situation and different difference in injuries periodontal pathogen of microorganisms duration comparative learning based on, endodonto -periodontal of injuries development in the process periodontal in tissues and root on the channel structural and functional complications to himself special didn't happen and of processes increase because of done increased said to the conclusion to arrive possible, low molecular weight in weight compounds and of adjectives free radical addition of cytokines imbalance, inflammation

against of intermediaries sharp reproduction, periodontogens duration and in injury microcirculation of the process increase.

Above of the said all of them periapical marginal periodontium of the hearth to the situation negative effect cause releases

Pulp - dentinal tubules - periodontium - periodontal in the system disorders with depends has been endodonto - periodontal of injuries development mechanisms to himself special feature root channels system and periodontium between in touch pathological the chain which stops new treatment methods current to reach determines

Obviously, it is about root channels system recovery and periodontal injuries atraumatic treatment the first to the seat comes out

The above with depends without, ozonated physiological solution and Vector ultrasound system with periodontal treatment using root channels system sanitation to do based EPI treatment method work released

EPI of treatment new method efficiency learning according to EPI in the study 75 infected patients participated did, treatment style depending on 3 groups divided.

All in groups endodontic treatment step by step done increased and lateral channels sanitation to do for ozonated physiological solution with 1500-18000 mkt / l ozone in concentration root channel debridement own into received - ozonated salted of the solution electrophoresis.

Periodontal of treatment different methods done increased:

protection tool bandage under Metrogil-denta ointment in the 1st group of application;

In group 2 - affected tooth to the territory ozonated physiological solution sending that's it together, in a group of 3 (24 people). periodontal treatment only Vector hardware with tooth root from treatment consists of was

Compared groups gender, age, location and instigator tooth endodontic damage diagnosis according to randomly selected.

Research from the results apparently as "VECTOR" ultrasound from the system use, medicine of means big from the arsenal addition without using EPI localization in the zone periodontal of tissues inflammation significant level to decrease take will come in group 3 patients of inflammation clinical symptoms no to do deadlines comparison groups than much short.

The introduction of the Vector ultrasound system into the complex treatment of patients with EPI allows for effective antimicrobial treatment of periodontal pockets, provides regeneration of periodontal tissues, activates local defense mechanisms and stimulates microcirculation. One of the important positive aspects of the use of the vector ultrasound system is a significant (3-4 times) reduction in the number of visits and the exclusion of the use of drugs for the treatment of periodontitis. Sanitization of the periodontal pocket leads to the effective removal of infection spreading factors from the root canal system, and as a result, high normalization of cellular immunity parameters is noted.

When the VEKTOR system is turned on, the average overall effectiveness of improving the clinical condition of the periodontium increases by 47.71% over standard treatment and 30.49% over ozone therapy; the corresponding normalization of microcirculatory characteristics was -68.36% and -41.76%.

Vector therapy is 44.88% higher than the standard treatment in terms of the efficiency of periodontopathogenic cleaning from periodontal pockets; and ozone therapy - by 19.44%; the corresponding proportions of root canal allocations are 21.21% and 14.04%, respectively; 19.46% - 10.14% and 17.88% - 10.26%, respectively, on the normalization of the cytokine profile, and 37.79% - 22.46%, respectively, on the restoration of the balance of the LPO-AOT system, and 29.46% - 10.85% .

Thus, Vector therapy is far superior to the standard method of EPI treatment, as well as multifunctional treatment such as ozone therapy.

The treatment regimen of patients with EPI, which includes the use of a vector system and sanitary treatment of root canals with ozone, not only has a stable therapeutic effect, but also increases the duration of the remission period. Thus, during the long-term study period (after 6 months), patients in group 3 had no complaints and clinical signs of local EPI lesions, as well as symptoms of local and general periodontal lesions; The number of such patients in group 2 was 5 (19.23%); and group 1 has 11 people (44.0%). Complex treatment of EPI using the vector system also had a positive effect on the long-term results of dental treatment: 6 months after treatment in group 3, there were no fillings of unsatisfactory quality, during the period of this study, 3 in groups 2 and 7 (11, In 54%) patients (28.0% of group 1 patients), restorations of unsatisfactory level were found.

The clinical effectiveness of injectable ozone therapy in the treatment of periodontitis in patients with EPI significantly increased the effectiveness of using Metrogyl denta for this purpose.

It is impossible to evaluate the therapeutic complexes used in the treatment of EPI without analyzing the frequency of complications associated with

endodontic treatment. The immediate results of the treatment showed that complaints of pain and discomfort in the area of the gums were reported by 7 (53.85%) patients of the 1st group; 5 (45.45%) patients in group 2 and only 2 (16.67%) patients in group 3, which is 3.23 and 2.72 times less than the number of immediate complications of endodontic treatment in groups 1 and 2.

The introduction of the vector system into the complex treatment has a direct positive effect on the periodontal tissues involved in the pathological process, and indirectly - affects the intracanal environment of the tooth, the frequency of complications for a long time after treatment and reduces weight.

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