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Study of the Effectiveness of the use of Autoplatelet Mass in the Prevention of Complications

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Abstract: Autoplasma obtained by centrifugation of blood platelets was injected using plasma lifting of patients with generalized periodontitis with special syringes in the tissue and compared with the current standard treatment of patients with periodontal diseases. It was found that the effectiveness was 23% of the 82 patients who received higher inflammation within the first 3 days, while 34% were more effective than the standard treatment regimen after 4 days. The remaining 43% of patients reached the disease spread phase within 5-8 days. This means that it is 3-4 times better (38%) than patients undergoing standard treatment. For comparison, the number of patients treated with the standard procedure was 36.

Keywords: generalized periodontitis, periodontal disease, plasmolifting, TannerellaForsythenis, platelet autoplasm, growth factor.

Introduction: Generalized periodontitis is one of the most urgent problems of dentistry. A sharp increase in the prevalence of generalized periodontitis, loss of numerous teeth (more than any other disease of the skeletal system of the jaw), chewing and speech disorders can affect the overall condition of the body and reduce the quality of life. [1]

The current trend in the treatment of periodontitis is a problem that today needs to be solved as much as possible, using conservative methods and minimizing surgical interventions. At the same time, due to the prevalence of antibiotic-resistant microorganisms, the number of allergic diseases among the population is increasing, and new approaches to the treatment of periodontal diseases are being studied and developed. [9, 2] based on this, research is being conducted on new methods and tools that increase the effectiveness of therapeutic effects on the pathological focus of periodontal inflammation.

The development and use of such methods and drugs that combine maximum safety and high biological activity in relation to body tissues is a priority. This method is now known as plasmocytoma injection of tissue-specific autopsy with the use of autoplasma enriched with platelets. Today, there is no doubt that periodontal diseases are cured only by the use of antibacterial and anti-inflammatory drugs. [15.5] today, it Is not enough to use immunocorrectors for the treatment of such pathologies, as well as to develop immunomodulation tools, as well as ways to improve hemodynamics, ways to improve tissue metabolism and oxygenation.

Plasmolifting is a very important method in gerontostomatology, because there are many factors that can reduce the regenerative processes of tissues in old age, aggravate the disease and worsen the prognosis for full rehabilitation. This technology is of great importance in the field of periodontics. Using this method, it is important to improve the physiology of bone tissue. Plasmolifting sooner or later should become a good additional and cost-effective method of treatment of affected periodontal areas, for the treatment of diseases of elderly patients and patients who need complex treatment.

Periodontitis is caused by microorganisms such as Porphyromonasgingivalis, Treponemadenticola, Tannerellaforsythhenis (Bacteroidesforsythus), Fusobacteriumspp. These are the factors that cause

the disease by microorganisms (marker) of periodontitis. Given the prevalence of inflammatory periodontal tissue diseases and their harmful effects on the body as a whole, it is necessary to develop new diagnostic and therapeutic complexes to help the doctor determine the etiological and pathogenetic factors of the disease, as well as correct them at an early stage of the disease.

The success of conventional treatment methods is very low, and often acute inflammatory processes occur in acute and chronic conditions that can complicate the recovery process. The period of periodontitis treatment is still key. Treatment of this pathology is very difficult and almost impossible to prevent further development of the disease, which requires the introduction of new methods of treatment in dental practice. Currently, periodontists are showing great interest in using platelet autoplasm (TAP) to treat periodontal tissue damage, also known as plasmolifting (RR Axmerovetal., 2013;). It is important to note that Plasmolifting technology is as efficient, convenient and safe as possible. [1, 14] platelet autoplasm has several useful properties: it accelerates tissue regeneration, has an anti-inflammatory effect and relieves pain, thus opening a new stage for its use in dentistry.

Autologous conditioned plasma, platelet rich (using thrombocytopathy (PRP)), allows to obtain a concentrated suspension of platelets. The use of TAP improves the oxygenation of periodontal tissues, which stimulate the bactericidal and phagocytic ability of the body's immune cells, and also stimulates the synthesis of active proteins in local tissues. The use of TAP has important advantages: ease of use, rapid recovery after the procedure; nasal cavity; insufficient side effects; access to other types of treatment; Risk of infectious diseases (Aksmerov R. R., etc. 2004) the use of platelet autoplasm in the treatment of chronic forms of the disease is relevant, since traditional methods of treating inflammatory diseases of periodontal tissues do not increase resistance to pathogenic risk factors. The above problems are relevant in the Republic of Uzbekistan, and there are few scientific papers on this issue

Studies demonstrating the use of platelet autoplasm in the treatment of generalized periodontitis are currently insufficient to understand the principle of action. The use of autoplasma platelets today is one of the most efficient modulation techniques and improved tissue regeneration. Autoplasm produces segregation of plasma and platelets [4] The strategy of using autoplasm is based on growth factors originating from platelets that improve and accelerate tissue processes. [5, 14] Nontoxic or immunoreactive platelet autoplasm accelerates natural regeneration mechanisms due to the presence of growth factors in=platelets. In addition, autologous conditioned platelet plasma modulates and regulates the activity of primary growth factors. This property distinguishes growth factors of the platelet autoplasma from recombinant growth factors each responsible for your own mechanism of regeneration

The following growth factors are present in platelets

- IGF (insulin-like growth factor)
- PDGF (platelet derived growth factor);)
- EGF (epidermal growth factor)
- FGF (fibroblast growth factor)
- TGF-I3 ("family" of transforming growth factor)
- PDEGF (platelet growth factor for endothelial cells)
- VEGF or PDAF (vascular endothelial growth factor)
- PLGF-1/-2 (placental growth factors)
- and thrombospondin, the amazing "culture shock protein"..

For example, PDGF (platelet growth factor) stimulates the proliferation and migration of mesenchymal (osteogenic) cells and stimulates angiogenesis, while IGF (insulin-like growth factor) stimulates cell differentiation, improves bone formation and collagen synthesis. In addition, TGF-G ("family" of transforming factor) contains 16 domains with signaling peptides and calcium-binding

sites, induces differentiation of mesenchymal cells, as well as differentiation of bone morphogenetic proteins. Osteoinducers (KMB-2, osteogenin or KMB-3, KMB-4,- b, -7, -8, and -9). Osteoinductive

Growth factors are delivered to the tissue or via autologous conditioned plasma and are accumulated by plasma, which stimulates the formation of fibroblasts (connective tissue cells). The next step is to increase the activity of fibroblasts. Fibroblasts, in turn, produce collagen, hyaluronic acid, and elastin. This process leads to the formation of young connective tissue and the growth of capillaries. Growth factors block osteoclasts and stimulate the proliferation of osteoblasts, preventing further loss of bone tissue and promoting its regeneration. Metabolic processes with autoplasmic platelet activity are restored, microcirculation and metabolism in tissue cells are normalized, tissue respiration is normalized, and local immune responses are activated [8-10].

Materials and methods. Currently, the main research groups are 82 patients with paradontitis. Of these, 28 (34%) are patients undergoing standard treatment, and 54 (66%) are patients with plasma lifting. Comparative statistics of treatment effectiveness showed that plasmolifting is up to 3.5 times higher than before.

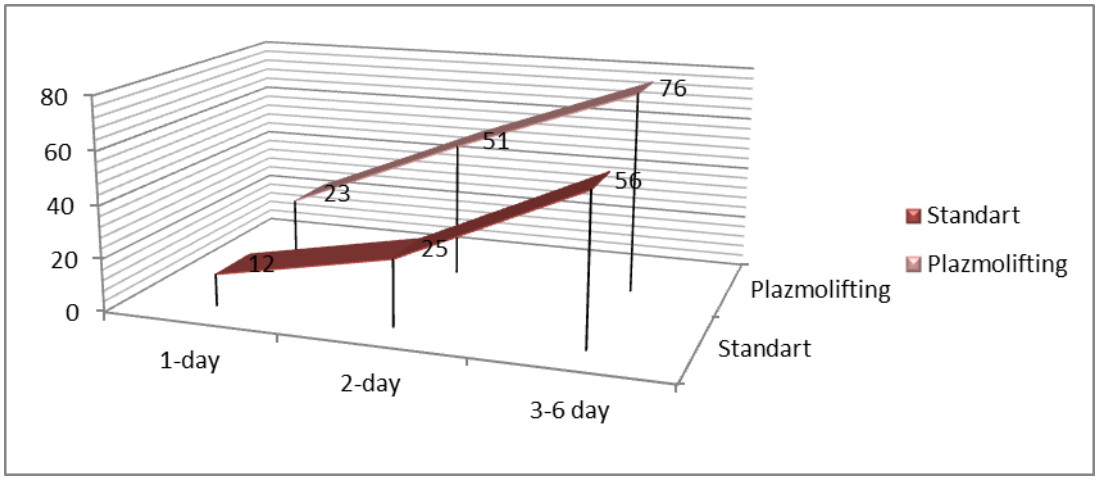
Results. Autoplasma obtained by centrifugation of blood platelets using plasma lifting in patients with generalized periodontitis was compared with modern standard treatment of patients with periodontal diseases who received special syringes. It was found that the effectiveness was 23% of the 82 patients who received higher inflammation within the first 3 days, while 34% were more effective than the standard treatment regimen after 4 days. The remaining 43% of patients reached the disease spread phase within 5-8 days.

When we study the condition of patients and the recovery period of their local inflammation, we find the following. The acceleration of metabolic processes in the autoplasm caused by platelets can be determined by the reaction of cells to the area of inflammation.

Permanent treatment methods		**Treatment with the help of plasma lifting**	
Changing the period of tissue inflammation in a patient with generalized periodontitis	Turgor of the skin	Changing the period of inflammation in patients with periodontal diseases	Turgor of the skin
Day 1-infiltration	12 %	Day 1-infiltration-emigration	23%
Day 2-emigration	25%	Day 2 proliferation	51%
3-6 days proliferation	56%	3-6 days of regeneration. Recovery period	76%

Spontaneous autoplasm is natural for human tissues [12,14], because it is biologically present in the biochemical ratio of body-specific components.

The pathophysiological process of platelet autoplasm can be simplified as follows: platelets leave the bloodstream as a result of loss of contact with the endothelium and release alpha granules [8]



The work of Xeynsort et al. Increased the number of platelets by 1 million / µl [18]. Thus, it is necessary not only to obtain the autologous conditioned plasma platelets, but also to increase the absolute number of platelets in tissues. [11] Plasmolifting is the ability to increase the number of platelets in tissues by increasing the volume of plasma. This property is typical for the natural and liquid state of plasma in accordance with the law m = Vq, where m is the mass of absolute platelets, V is the volume of plasma, and q is the concentration of platelets. In practice, this means introducing 1-2 ml instead of 0.2-0.3 ml, which is very easy to perform in soft tissues and large joints. [1] the Increase in the prevalence of chronic inflammatory diseases of periodontal tissues is observed mainly from 30 to 50 years. The number of patients under 45 years of age reaches 96%. Periodontal diseases are diagnosed in 50-85% of patients aged 16 to 20 years (Nikolaev A. I., 2013). Low level of oral hygiene quality. cause disease. The advantage of injectable forms of platelet autoplasm is that they are easy to use and available in various fields of medicine, surgery, and therapy. This is a form of autoplasma injection, containing platelets, and enhances the therapeutic effect of autoplasma due to the presence of platelets and factors of their growth (Russian Federation).

Conclusion: Summarizing the results of the study confirmed the clinical effectiveness of platelet autoplasm in the treatment of periodontitis. The use of plasmolifting in the complex treatment of periodontal diseases allows you to stop the inflammation in the periodontal earlier than with the scheme. The dynamics of the RMA index was characterized by a significant decrease in all groups, but in the 2nd group of the study, it was noted that after treatment, there was a slight change in the value of the index and tissue regeneration. The above results show that in group 2 patients using platelet autoplasm, the decrease in edema, hyperemia, hemorrhage, and periodontal parameters was more pronounced, indicating a significant difference between the two groups. ,

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