



are one of the most urgent issues of modern dentistry. Considering all the importance of the situation, the treatment of inflammatory diseases of the maxillofacial area should be comprehensive. Physical rehabilitation plays a considerable role in a comprehensive treatment of maxillofacial diseases.

Objective: to learn the efficacy of physical rehabilitation in a comprehensive treatment of inflammatory processes of the maxillofacial area during the early postoperative period. In order to provide the outflow an inflammatory exudate physical rehabilitation is carried out in the form of therapeutic exercises. Intensity and period of exercises are determined depending on the functional state of the patients' bodies. Special exercises for mimic and masticatory muscles are indicated in association with head movements repeated 5-6 times during 10-20 minutes. Slow developing exercises for the muscles of the upper and lower limbs, back and anterior abdominal wall in the beginning lying and sitting positions in combination with long-phase expiration respiratory exercises are indicated.

The results of the study showed that physical exercises provide improvement of the blood and lymph circulation in the injured place; activate reparative processes; accelerate resolution of an inflammatory exudate and improve its outflow from the wound; restore the functions of the mimic, masticatory and lingual muscles; prevent rough scar changes on the skin and mucous membrane. Physical rehabilitation prevents destructive-atrophic processes in the peri-articular tissues and thus prevents contracture and ankylosis in the temporal-mandibular joint, respiratory and thromboembolism complications, normalizes emotional state, possibilities at home and at work.

Thus, the methods of physical rehabilitation used in a comprehensive treatment of inflammatory processes of the maxillofacial area during the early postoperative period produce a positive effect on resolution of an inflammatory exudate, prevent development of marked scars, increase general nonspecific response of the body and provide restoration of the functions lost.

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THIRD MOLARS AS A SOURCE OF MESENCHYMAL STEM CELLS AND THEIR REGENERATIVE POTENTIAL

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Tissue engineering is one of the main directions of modern research not only in general medicine but also in dentistry. It is an alternative method of restorative treatment that is developing rapidly nowadays. Dental mesenchymal stem cells (MSCs) are easily available and can be expanded in vitro with relative genomic stability over a long period of time. Easy availability, multi-line differentiation potential, and immunomodulatory effects make dental MSCs different from other MSCs and an effective tool in stem cell therapy.

The aim of our research is to carry out a literature review concerning the possibilities of using MSCs obtained from third molars. Methods of our research are bibliosemantic, content analysis by using search databases (Medline, Scopus, Web of Science, Embase). Stem cell populations can be isolated from different tissues of the oral and maxillofacial regions. The extracted third molars are the most common source for dental pulp stem cells (DPSCs) which are present at different ages. DPSCs have high proliferating activity and are mostly used in tissue engineering. DPSCs are multipotent stem cells that could differentiate into various cell types, such as osteocytes, chondrocytes, adipocytes, cementoblasts, odontoblasts, endothelial cells, neuronal cells, melanocytes, myoblasts, and hepatocytes.

DPSCs can be used for vital pulp capping, after pulpotomy or even after pulpectomy with the subsequent vital pulp regeneration and stimulation of tertiary dentine formation (G. Meza, 2019). DPSCs may show the regeneration of dentinal tissue with the same thickness, porosity, and density, improve gingival status, and enhance both bone and cementum regeneration (B. Hernández-Monjaraz, 2018). They can be successfully applied for the temporomandibular joint (TMJ) arthritis treatment in rats (Cui et al), promote taste bud regeneration (Y. Zhang, 2019), the craniofacial bone defect repairing (R. T. Stuepp, 2020), systemic lupus erythematosus (SLE)



therapy, cardiac repair, reduce a kidney glomerular lesion and perivascular inflammation infiltration, and able to treat diabetes. Recent studies have shown the extensive usage of hDPSCs in the neurodegenerative diseases such as spinal cord injury (SCI) and peripheral nerve injury, acute cerebral ischemia, and autoimmune disorders.

Thus, these data are of significant importance, since dental pulp stem cells from third molars are the most suitable material for use in tissue engineering because they do not violate moral and ethical norms and human rights, unlike the embryonic stem cells. Cell collection is a non-invasive procedure. It is more cost-effective and can be widely used in various fields of medicine and dentistry in particular.

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ANALYSIS OF THE PECULIARITIES OF THE ORAL FLUID IN PERIODONTAL DISEASES WITH UNDERLINE METABOLIC SYNDROME

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Over the past few years, scientists have devoted attention to the problem of studying the relationship between metabolic syndrome and periodontal disease. Topics of risks related to the association with various metabolic disorders have become one of the most important research topics in periodontology. Oral fluid plays a leading role in the proper functioning and maintenance of homeostasis of the entire periodontal tissue complex, is a mediator of the combination of its structures with the environment and an important nutrient substrate for the microflora of the oral cavity.

The objective of the research is to study the quantitative and qualitative changes in oral fluid in periodontal disease with underline metabolic syndrome, the rate of secretion of mixed saliva, its viscosity, and acid-base balance.

Two groups were formed for the research: basic and comparative. The main group included 30 people with inflammatory-dystrophic lesions of the periodontium with underline metabolic syndrome, the comparison group consisted of 30 people with the periodontal disease without endocrinological pathology.

According to the obtained data, the average value of the rate of salivation in patients with metabolic syndrome (0.41 ± 0.04 ml / min) was lower than the normal values for this indicator (0.5 ml / min) and 1.5 times lower than the same value in patients without endocrinological pathology (0.60 ± 0.07 ml / min, $p < 0.01$). Thus, hyposalivation in all age groups and a decrease in salivary secretion with age were observed in patients with metabolic syndrome, which was confirmed by objective complaints of patients referred to dryness and lack of free saliva in the oral cavity. The mean value of oral viscosity in patients with metabolic syndrome (1.72 ± 0.27 MPaS) exceeded the upper margin of reference values (1.2-1.4 MPaS) and was greater than that of patients without somatic pathology 1.2 times (1.39 ± 0.18 MPaS, $p < 0,01$). In the main group, a shift of the number of hydrogen ions to the acidic side was observed in all the age categories. The comparison group also showed a decrease in pH with aging, but the tendency was smaller.

The results of the study revealed homeostatic shifts in the oral biosystem of patients with periodontal disease with underline metabolic syndrome: a decrease in salivation may indicate a violation of the secretory function of the salivary glands with underline metabolic disorders, which naturally affected the increase in saliva viscosity. The predominance of acidosis in the oral cavity and the reduction of the protective properties of saliva becomes an important factor in creating a periodontopathogenic situation in the oral cavity and the complication of the course of periodontal disease in this category of patients.