Introduction: Tooth loss compromises human oral health. Although several prosthetic methods, such as artificial denture and dental implants, are clinical therapies to tooth loss problems, they are thought to have safety and usage time issues. Probably, development of stem cell research will, over time, transform dental practice in a magnitude for greater than did dental implants. Recently, tooth tissue engineering has attracted more and more attention. Stem cell based tissue engineering is thought to be a promising way to replace the missing tooth. This review outlines the recent progress in mesenchymal stem cell research and use in tooth regeneration, oral and craniofacial applications.

Methods: The study was effectuated on 25 extracted pigs teeth aged between 2-3 months. The cells were obtained from dental pulp fermentation in 0,25% dispase I for 10 min at 37 ^{0}C. The cells were cultivated in 24 well in triplicate, in DMEM, 10% FBS, 5%CO2, 96% humidity, 37^{0}C.

Results: The cells were cultivated in $0,5x10^6$ per well, in 24 well culture dish during five days. At the end of this period cells were colored by Romanovski and counted under the light microscope. The number of the cells after seven days cultivation were: 4,5 millions in one ml. of suspension.

Conclusions: Despite the rapid findings and wealth of data provided by *in vitro* and *in vivo* approaches in the field of dental regeneration, further research studies are required before pulp regeneration and even tooth restoration can be applied in dentistry. However, all data also confirm a realistic feasibility of dental tissue repair in the near future. It is obvious that our knowledge in dental tissue engineering expands rapidly. Stem cells from a tiny amount of tissue, such as the dental pulp, can be multiplied or expanded potentially to sufficient numbers for healing large, clinically relevant defects. Stem cells can differentiate into multiple cell lineages, thus providing the possibility that a common (stem) cell source can heal many tissues in the same patient, as opposed to the principle of harvesting healthy tissue to heal like tissue in association with autologous tissue grafting. Referring to previous findings, future experiments should be focused on the design of a highly sophisticated biological based scaffold system, which would greatly improve tooth viability and health maintenance in dentistry.

Keywords stem cell, tooth engineering, dental pulp stem cell.

DENTAL DISPENSARY IN UKRAINE: STATE, QUESTIONS AND PROSPECTS

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According to WHO data Dental disease is the most common and cover over 90% of the population of Ukraine. In recent years, this index tends to a constant increase. This leads to growth of somatic diseases, early loss of teeth, increasing the number of people who need dental prosthesis. Indicators of the intensity of cavities in both children and adult populations exceed European ones, reflecting the lack of treatment and preventive measures among the population.

Objectives: to identify the main reasons for the denial of dental care, optimize recommendations for attracting people to the dental clinical examination, treatment and prevention measures.

Methods: questioning, statistical and bibliographic methods.

Results: we conducted a survey among different population groups. Participated in this event 143 persons. The purpose of the research was to identify the main causes of failure of public dental care. The study found out: 39,2% (56 people) do not seek help from a dentist unless the cosmetic defect or pain is present, and consider themselves healthy; 11,9% (17 persons) do not visit dentist regularly because of the

lack of time; 2,8% (4 persons) refuse dental preventive and treatment measures and explain this as a fear of dental procedures; 7% (10 people) can not afford quality dental care; 0,7% (1 person) unable to attend dentist because of the lack of such specialists in the region where they live; 22,4% (32 people) visit a dentist once a year; 16% (23 people) regularly have preventive inspection and rehabilitation of oral cavity if necessary at the dentist's at least twice a year.

Conclusions: analyzing the methodological literature and research results, we found that the main reason for the growth of the prevalence of dental disease in Ukraine is the refusal of the population of clinical examination. This attitude of people is due to insufficient information provision about the mechanism of dental disease levels increasing and the importance of the scheduled dental help. Quite a large percentage of respondents have a fear of dental procedures. The reason for this phenomenon is stereotyped attitudes to dental equipment, which was formed in the middle of 20th century, when due to insufficient development of the dental industry and anesthetic drugs.

We consider it appropriate to create inform-groups from the number of the students of dental faculties from different medical universities of Ukraine who will inform people about the necessity of dental diseases prevention; to organize routine dental checkups in all educational institutions and at the workplace of ukrainians; to provide medical staff to the areas where is a lack of skilled medical workers. These measures will help to significantly reduce the prevalence of dental diseases among the population which will increase the quality of life and reduce the overall morbidity.

PARODONTAL DISEASES IN DENTO-MAXILLARY ANOMALIES. ASSESSMENT AND ASPECTS OF THE COMPLEX ORTHODONTIC TREATMENT

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Introduction: The emergence of the inflammation and parodontal disease is due to the activity of two complexes: the primary causal complex which includes the dental plaque and the secondary causal complex with its local factors and actions upon the primary causal complex. The dental plaque is the main cause of occurrence of the inflammatory parodontal disease. Local factors with negative influence on parodontal disease are dento-maxillary anomalies, occlusal trauma, form and integration of the labial frenulum, etc. Abnormalities in tooth size, position and shape can cause disorders in gingival architecture, which lead to the development of problem areas with difficulties in self-cleaning and as a result, the progressive accumulation of dental deposits. Also, the dento-maxillary anomalies create overload conditions for the periodontal support, with development of the occlusal trauma and later with an eventual gingival recession.

The purpose of the work was to assess the parodontal status in the case of dento-maxillary anomalies and the clinical and paraclinical supervision within a complex orthodontic treatment.

Materials and methods: The research involved the examination and treatment of 98 patients with different dento-maxillary anomalies, with an average age of $13,77 \pm 0,36$ in a range of 8-24 years old. The algorithm for the investigation of patients included exo- and endooral examination, fotostatic test, model biometric study; X-ray examination before and after orthodontic treatment, assessment of the parodontal disease through radiological and endooral clinical examination, by determining the gingival index of Parma, the papillary hemorrhage index of Mühlemann; and assessing of the oral hygiene index (OHI-S).

There were diagnosed parodontal diseases in 77 patients (78, 6%) were diagnosed with dento-maxillary anomalies and 21 patients (21, 4%) were considered parodontally healthy.