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Program Speaker – Teresa Sierpińska

Title

Changes in the Oral Cavity Milieu, Nutritional Habits and the Quality of Life in Neoplasm-Derived Postoperative Patients Treated with Acrylic Prosthetic Restorations

Abstract

Surgical treatment of head and neck neoplasms gives rise to a major loss in the number of tissues. At the same time, it generates changes in the prosthetic surface. In many countries prosthetic rehabilitation using removable restorations has still been the only solution enabling the reconstruction of deficient tissues and teeth. The oral cavity constitutes an environment where a great deal of biochemical processes take place. Under physiological conditions, an equilibrium takes place between the synthesis and accumulation of reactive oxygen species (ROS) in cells and tissues and the antioxidant system's capability of their eliminating. ROS are natural products. At physiological levels, they play a crucial part in the normal functions of a variety of cellular processes. Every disbalance between the production of ROS and the efficacy of antioxidant systems leads to an oxidative stress. This, in turn, results in damages in key cell macromolecules, i.e. DNA, proteins and lipids. More and more data indicate ROS as a causative factor in the neoplastic transformation of the cells. High levels of ROS in neoplastic cells may induce the following: cellular adaptation, the elevation of proliferation rate, mutations in DNA accompanied by the genome instability, as well as resistance to some classes of drugs used in the treatment of neoplasms. Consequently, each of the aforementioned may promote the neoplasm's development.

Study Aim:

The study was aimed at evaluating selected parameters of oxidative stress in the saliva of oncological patients treated with removable acrylic restorations. Furthermore, it assessed their quality of life and nutritional habits.

Material and Methods:

The study material was provided by stimulated and non-stimulated saliva collected from 25 patients operated on due to a neoplasm prior to prosthetic treatment and after the elaborating of acrylic prostheses. The control group was represented by 25 edentulous patients with no diagnosed neoplastic disease. The following have been assessed in the salivary supernatant: the levels of non-enzymatic antioxidants – uric acid (UA), reduced glutathione (GSH) and oxidated glutathione (GSSG); the levels and activities of antioxidant enzymes by means of colorimetric and fluorometric methods – glutathione peroxidase (GPx), catalase (CAT), superoxide dismutase (SOD); total antioxidant status (TAS), total oxidant status (TOS) and total antioxidant

capacity (TAC). The following validated questionnaires were used in the study: EORTC QLQ-C30 , QLQ-H&N35.

Results:

Several findings based on conducted studies were of note. The parameters of oxidative stress changed over respective time intervals. Furthermore, compared to the control group, a reduced adaptation to prostheses and an inconsiderable modification of nutritional habits in the arm of oncological patients were found.

Conclusions:

Removable acrylic restorations have still been commonly used in a number of countries. They contribute to changes in biochemical processes of the oral cavity, improve the quality of life and patients' nutritional preferences.

Biography

Prof. Teresa Sierpiska: 33-year- experience in the field of prosthetic dentistry, since 2018 the Head of Department of Prosthetic Dentistry, Medical University of Bialystok, Poland, National Consultant in Prosthetic Dentistry (cooperation with Polish Ministry of Health), the President of Board responsible for National Specialty Certificate Examination at Medical Examination Centre, Poland, Associate Dean for Educational Affairs at Faculty of Medicine and Dentistry in Medical University of Bialystok. The President of Prosthetic Section of Polish Dental Association, President of European Prosthodontic Association

The main field of interest: physiology of masticatory system, occlusion, tooth wear, interdisciplinary oral rehabilitation.

Academic Achievements: 108 published papers, IF = 59,7; h- index 12, co-author of the book: Handbook of research on clinical applications of computerized occlusal analysis in dental medicine, by RB. Kerstein, Chapter: Tooth wear: prevention, treatment, and monitoring using the T-Scan/BioEMG synchronization module, IGI Global, USA, second edition in 2020, the member of the editorial board of CRANIO, Journal of Stomatology, Prosthodontics