Prospects for further research will be to study the priority directions of health promoting activity of health promoting schools in the countries of Eastern Europe: Poland, the Czech Republic, Hungary, Ukraine and Russia.

References:

1. Models of Health Promoting Schools in Europe / [Milko Cheshlarov, Miluse Havlinova, Jo Inchley and others]; edited by Bjarne Bruun Jensen and Venka Simovska. – Copenhagen : IPC, 2002. – 81 p.

2. Better schools through health: learning from practice. Case studies of practice presented during the third European Conference on Health Promoting Schools / [Goof Buijs, Ailona Jociute, Peter Paulus and Venka Simovska]. – Vilnius, Lithuania : Kriventa, 2009. – 119 p.

3. Key words: health promoting schools, formation of healthy lifestyle, European Network of Health Promoting Schools.

Accepted for printing on 26 Sept 2018

DOI: 10.29256/v.02.02.2018.escbm63

DYNAMICS OF SALIVA ENZYMES IN PATIENTS AFTER USING OF BARRIER MEMBRANES

Rachkov A. A.
Belarusian State Medical University, Republic of Belarus

Experts agree that the study of biomarkers, saliva enzymes in the near future will allow to conduct non-invasive diagnostics not only diseases of the oral cavity, but also a wide range of general somatic cases. To date, for the description of reparative bone regeneration is actual to determine the activity of enzymes in mixed saliva: lactate dehydrogenase, alanine aminotransferase, aspartate aminotransferase, alkaline phosphatase, acid phosphatase, superoxide dismutase. The increase or decrease in the reference values of the enzyme’s activity allows us to draw conclusions about the intensity of mineralization and inflammatory processes in the maxillofacial region. In addition to enzyme activity, it is possible to assess the level of mineral metabolism in oral fluid.

Aim of the study was to assess the informative value of indicators for reparative processes of the jaw bone tissue when using barrier membranes, based on the determination of saliva enzymes.

Materials and Methods. 40 patients with diagnoses: chronic apical periodontitis (15 people, 37.5%), radicular cysts of jaws (15 people, 37.5%), wisdom teeth retention (10 people, 25%) were included into the study. Patients were divided into 2 groups. In group I (control) surgical treatment without barrier membranes was performed. In group II the surgical protocol included the use of collagen barrier membranes to prevent the proliferation of soft tissue elements and optimize the process of bone tissue regeneration. Patients were randomly assigned to groups. All patients underwent surgery according to clinical protocols. Oral fluid intake was performed prior to surgery, on days 3 and 7 after surgical treatment. Before the manipulation, in the morning, on an empty stomach, before the local anesthesia, a sample of a 1.5 ml oral fluid was taken in the patients for biochemical tests.

Results. A comparative assessment of alkaline phosphatase activity of in the oral fluid in both patients’ groups showed advantages of using barrier membranes. Before the operation, the test value in the control group was 16.2 (14-19) U/L, in the II group 16.3 (13-20) U/L. On day 3, a significant difference in the activity level of the studied marker in group I (21.35 (17-33) U/L) was revealed in comparison with group II data with the use of barrier membranes (28.3 (19-33) U/L). In group II patients, the level of alkaline phosphatase increased by an average of 73.8%. Among the patients of the control group, the decrease was 31.8%. On the 7th day, the level of activity of alkaline phosphatase in the oral fluid in group I (20.8 (19-21) U/L) did not change significantly in comparison with group II (25.5 (18-32) U/L).

A significant postoperative increasing the level of alkaline phosphatase in patients of group II indicates an active repair process. This is due to the reliable stabilization of the blood clot in the wound by the barrier membrane and the chemoattractant effect of collagen for the participants in the inflammatory process.

Prospects for further research. Thus, a promising direction in researching of bone repair processes (such as guided tissue regeneration) is the study of biochemical composition in oral fluid of patients in dynamics.

References:

1. Schwarz F., Rothamel D., Herten M., Sager M., Becker J. Angiogenesis pattern of native and cross-linked collagen membranes: an immunohistochemical study in the rat. Clin. Oral Implants Res. 2006; 17:403-409.

2. Rakhmatia YD, Ayukawa Y, Furuhashi A, Koyano K. Current barrier membranes: titanium mesh and other membranes for guided bone regeneration in dental applications. J Prosthodont Res. 2013 Jan;57(1):3-14.

3. Rothamel D. et al. Biodegradation pattern and tissue integration of native and cross-linked porcine collagen soft tissue augmentation matrices – an experimental study in the rat. Head Face Med. 2014;10:10.

4. 26. Wang G., Yang H., Li M. et al. // J. Bone Jt. Surg. (Br). – 2010 – Vol. 92, №2. – P.320-325.

Keywords: barrier membranes, guided tissue regeneration, alkaline phosphatase.

Accepted for printing on 18 Sept 2018