

# SCIENTIFIC CONTRIBUTION OF PROFESSOR ILARION POSTOLAKI IN THE STUDY OF PROTECTIVE AND REPARATIVE REACTIONS IN DENTAL TISSUES DURING THE ORTHOPEDIC INTERVENTION

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Based on years of research by the beginning of the 80s of the XX century prof. I. Postolaki (1936-2011) – the founder of Moldovian schools prosthetic dentistry (Chisinau, Republic of Moldova), has established and described the basic principles of protective and reparative reactions in dental tissues. A detailed study of the obtained results, conclusions and practical recommendations contained in the scientific papers of I. Postolaki has revealed that currently they didn't lose their popularity, but even acquired a special bioethical significance for the patients of wide age range, who need not only prosthetic treatment, but psychological assistance as well. It should be emphasized that, generally, the scientific direction developed by I. Postolaki encompasses many important principles of global medical tendency directed on minimally invasive instrumental intervention in the tissues and organs of the human body.

## **Particular qualities of dental tissues reaction on the deep preparation by I. Postolaki:**

### **After 1 day:**

1. The sharp vascular perfusion of the pulp;
2. Large areas of hemorrhage;
3. A significant vacuolization of the odontoblasts and other pulp areas;
4. A large number of macrophages as a protective phenomenon.

### **After 30 days:**

1. Vascular perfusion of pulp tissues is less pronounced, but there is observed a phenomena of reticulated atrophy – as a sign of degenerative process, leading to death of the odontoblasts;
2. The number and size of vacuoles is reduced;
3. Formation of tertiary dentin in the peripheral layer.

### **After 90 and 180 days:**

1. Start of the normalization of vascular reaction, with progressing at the same time of degenerative processes (reticulated atrophy);
2. Localization of small vacuoles in the layer of odontoblasts;
3. There are detected decay content of exposed dentinal tubules in areas with exposed dentine;

4. From the part of the tooth cavity takes place the formation of tertiary dentin layer, which is slightly channeled, and available dentinal tubules are arranged randomly.

#### **Particularities of reparative regeneration of dentine by I. Postolaki**

1. After the preparation of the teeth with denudation of dentine, the dynamics of its morphological restructuring leads in the end to the formation of protective capsule around this zone. It prevents the entering of decaying products of the opened dentine tubules in the depth of tissues, and also in the organism.

2. It has been detected, that preparation of the teeth with the destruction of enamel-dentine junction leads to the damage of formation of the zone with sclerotic dentine (dead ways). In some cases, even after 10 years and even more after the covering of the tooth with artificial crowns, there is no evidence of mineralization of the dentine's basic substance and formation of sclerotic layer on its surface.

3. It has been proved, that the peripheral line of sclerotic dentine (60-80 mkm) is formed during the first 3 years. The speed and width of its formation depends directly of the depth of enamel preparation and the age of sick person. The continuing growth of its dimensions takes place slower.

Professor I. Postolaki points, that the teeth preparation must be considered as a type of surgical intervention demanding corresponding protective measures, directed to formation of optimal conditions for manifestation of protective reactions. It is also fair from that point of view, when the enamel-dentine junction is destroyed and the dentine is denuded, the dentine tubules are opened and the pulp's elements – odontoblast protoplasmic outgrowths are damaged. Consequently, as a result of such action appears a injured surface of dentin and a injured surface of pulp.

Considering the specific structure and biological properties of hard tissues of the tooth, I. Postolaki detected that in the nearest days after preparation there are no clear morphological changes of morphological character. They manifest only in the pulp of the teeth a few hours after the operative intervention thanks to the particularities of its structure and functions. Based on the above stated, there is one basic conclusion which must become a rule for all prosthodontists: while preparing teeth for artificial crowns, the doctor must take prophylactic measures for preserving the vitality of tissues of the tooth, and after ending the operative intervention-corresponding protective measures.

#### **Bibliography:**

Постолаки И. И. Закономерности защитно-компенсаторной реакции в зубных тканях и возможности ее стимулирования при ортопедических вмешательствах. Экспериментально-клиническое исследование. Дисс. ... д-ра мед. наук. Киев, 1983, 263 с.