

## RATIONAL TREATMENT OF APICAL PERIODONTITIS OF PERMANENT TEETH IN CHILDREN

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**Introduction:** Although at this moment there are a lot of scientists who research different ethio-pathological aspects, treatment and diagnosis of apical periodontitis of permanent teeth in children, this problem still exists not only for the pediatric dentists but also for the dental surgery specialists because apical periodontitis is the main cause of complications of entire dental system of the child. It was demonstrated that the treatment of apical periodontitis of the teeth with immature roots with BioR leads to the cure of periapical infection in a short term and also stimulates the roots apexification.

**Purpose** of this study was to estimate the therapeutical effect of BioR on children permanent teeth affected by apical periodontitis; To study the therapeutical effect of BioR in treatment of apical periodontitis in permanent immature children teeth, to evaluate the apexification effect and the biocompatibility with children dental tissues.

**Materials and methods:** The comparative study was made on 20 patients aged 7-11 years who were divided into 2 groups.

The first group (11 patients) - the root canals were irrigated with BioR.

The second Group (9 patients) - the root canals were irrigated with calcium hydroxide.

In the patients from the first group, root canals were irrigated with BioR and treated with ultra-sound. At the same time a cone to maintain the substance in tissue for a long time and to avoid the pathogenic flora penetration was inserted in the canal. The procedure was repeated each four days. 4-5 procedures were performed. At the end the canal was sealed with a BioR paste (Zn oxyde cement saturated with BioR liquid).

Patients from the second group—the root cannals were sealed with calcium hydroxide and an obturation was applied. Procedure is repeated once in 10 days in first month then once in 30 days. For the final root obturation calcium hydroxide paste (Dycal Dentsplay) was used

**Results:** The results of both ways of treatment were compared at 1, 3, 6 months from the beginning of the treatment. All patients were Rx investigated and the quality of therapy was evaluated by the apexification and apexogenesis changes.

The inflammatory lesions of the patients from the first group reduced by about 35% in first month, 70% in the third month and 97% at sixth month. The apexification process- 25% in first month, apexogenesis: 1st month -30 %, 3rd month-60%, 6th month-75%.

In the second group a decrease of inflammatory lesions was seen in the first month with about 15%, 3rd month-40% and then the apexification process was initiated and the closing of cannal lumen was seen in 90% after the 6th month and the radicular apexogenesis was seen in 10%.

**Conclusions:** In comparison with other medical substances used in endodontics BioR does not induce the process of paexification but leads to the stimulation of the of radicular apexogenesis. Thus BioR is an efficient remedy in the treatment of apical perodontitis of permanent teeth in children. These results are representative only for this lot, more studies need to be done.

**Key words:** Apical periodontitis, BioR, Calcium Hydroxide, Apexification, Apexogenesis.