The introduction in the dental practice of new preparations for the care of the vital pulp (pulpitis) allows to enlarge modern knowledge on the morpho-functional state of the pulp during the period of inflammation (3).

The weak efficacy of the known treatments (complexity of the cares) is due to the absence of preparation able to act directly on the inflammatory process of the dental pulp, allowing in the same time to restore its functional activity (5).

The used treatments after a vital amputation of the pulp are supposed to ensure haemostatic, analgesic and bactericidal effects, allowing, thus, to lower the inflammation of the pulp during the first stage of the treatment. In a second stage, the treatment have to begin the process of metaplasia of the radicular pulp. This type of treatment might also act directly on the mechanism of the dental stimulation as well as, slightly (in a measured way) on the irritated ondotonological area (4).

Target of the evaluation : to compare clinical data of modern treatments of the pulp by the method of the vital amputation.

Means and methods

The preparations Pulpotec (PD, SWITZERLAND) and « Kollap An-K » (Inter Medapatite, RUSSIA) have been evaluated. As a control, traditional Zinc Oxide paste has been used, of which the effects on the pulp is well known (5,6). In our researches, the clinical effects have been observed on 36 molars of 36 patients of the 2 sexes, aged between 17 and 54 years.

27 molars, presenting various types of pulps, have been treated by the method of vital amputation with « PULPOTEC », 4 have been treated using the « Kollap An-K » gel, and, finally, 4 molars by using a Zinc Oxide paste. The following periods of control have been fixed : the day of the treatment by vital amputation, 3 days later, 6 months later, 1 year later. The following criteria for the appreciation of the state of the pulpo-periondontal complex have been adopted : usual clinical criteria; percussion; instrumental methods, X-rays and « électro-odonto diagnostic » (EOD).

Results of the evaluations

In the successive periods of control, changes of the EOD levels have been observed. Before treatment, the EOD index was at an average of à 35,4 mkA (MA). After treatment, the EOD index has dropped at the level of 48,8 mkA during the treatment with Pulpotec, to 57,4 mkA for the treatment of « Kollap An » and to 42,1 mkA for the control treatment with Zinc Oxide paste. 3 days later, EOD index was stable at 48,8 mkA (Pulpotec), to 57,4 mkA (Kollap An) and to 42,2 mkA (control). During the control observations after 6 months, the average EOD was of 52,2 mkA (Pulpotec), of 59,7 mkA (Kollap An) and of 50,1 mkA (control). After 1 year, the average EOD index has been registered to 56,1 mkA, for Pulpotec, to 61,1 mkA for « Kollap An » and to 51,8 mkA in the control treatment.

During successive controls, the EOD indexes have been maintained within these limits during all the observation period (see table).
Comparative characteristics of the objective data of observation after treatment of a pulp by the vital amputation method using Pulpotec, « Kollap An » and a control preparation (absolute numbers and percentages).

These data allow to confirm the vitality of the radicular pulp, able to fulfill its function.

The phenomenon of the painful percussion just after the treatment by pulp amputation is considered by the authors as a normal traumatic reaction of tissue answer of the pulpo-periodontal complex and as a weak irritation due to the treatment of the capping of the pulp stump. On the day of treatment (first session), a painless percussion has been stated by 27 patients (100%) when using all the treatments. At the third day, a painful percussion was observed among 3 patients (11,2%) (see table) treated through Pulpotec, among 4 patients (100%) for the treatment « Kollap An » and was not observed for the control treatment. After 6 months, 27 patients (100%) treated through Pulpotec, 3 patients (75%) treated through « Kollap An » and 4 patients (100%) with control treatment have presented a painless percussion and 1 periodontal painful reaction was observed after « Kollap An » treatment. One year after treatment, 1 patient (3,7%) came back to complain about pains during mastication when treated through Pulpotec and 2 patients (50%), when treated through « Kollap An ».
X-rays controls have been conducted until healing. No pathological change has been observed by the 36 patients (100%). The following data have been observed after 6 months and 1 year: by 26 patients (96.3%) no change of the periapical tissues have been observed. At 1 patient (3.7%), a change in the X-ray image has been observed after complaint of pain during mastication of the treated tooth through Pulpotec. What is characteristic is the fact that this patient is among the 11.2% ones by whom pain during the mastication after 3 days have been observed. After 6 months and 1 year through «Kollap An», 1 patient (25%) has shown changes in the superior area of the radicular canal. No modification of the periapical tissues have been observed after the treatment control.

According to the analysis of the obtained data, one can conclude as follows: all the used treatments conform to the requirements linked to preparations foreseen for the capping of the pulp stump during a treatment through vital amputation. The rate of efficacy of the haemostatic, analgesic and bactericidal effects is not the same according to the evaluated preparation. The irritation of the pulp stump at the evaluated patients can be characterized from weak to strong.

The analysis conducted during the various period of time have shown that the result corresponds to the data of a large number of authors who suggest different treatments when performing a vital amputation. This analysis confirms the efficiency of the various evaluated treatments as well as the positive results obtained in 80 to 94% of the cases (1-2-4-5).

Bibliography