

## CLINICAL TEST OF "DEOMINT" TOOTHPASTE

Botushanov P., Grigorov G., Markova K.

Department of Operative dentistry end endodontics, Faculty of Stomatology,  
Medical University of Plovdiv

### ABSTRACT

Toothpaste is the main means of oral hygiene. It contains active components that help achieving prophylactics of caries and parodontic diseases.

The purpose of this test is to study the therapeutic and prophylactic effect of "Deomint" toothpaste, which contains sorbitol, sodium monofluorophosphate, PEG - 400, hydroxyethylcellulose, aerosil, calcium carbonate and silica.

There have been reported PLI under Green & Wermillion, PMA index of Massler & Schour and IKS.

**Key words:** Prophylaxis toothpaste, sodium monofluorophosphate

### INTRODUCTION

Toothpaste is essential for the oral hygiene and prophylactics against oral cavity diseases. Its great importance is determined by the fact that nowadays a large number of people suffer from various diseases of the oral cavity, and the hygienic requirements of the contemporary man have increased considerably. It contains various chemical and natural substances with active effect, which makes it a valuable assistant to the stomatologist in his prophylactic activities.

### AIMS AND PURPOSES

The aim of this test is to study the therapeutic and prophylactic effect of "Deomint" toothpaste. For this purpose the following tasks have been assigned:

To be tested:

1. The plaque-cleaning effect of the toothpaste.
2. The plaque-inhibitory effect
3. The anti-inflammatory effect
4. The side effects
5. The organoleptical properties

### MATERIALS AND METHODOLOGY

"Deomint" toothpaste contains: sorbitol, PEG-400, hydroxyethylcellulose, aerosil, sodium monofluorophosphate, CaCO<sub>3</sub> and SiO<sub>2</sub>. The test was carried out with the participation of 42 volunteer patients, volunteers of good clinical health, available at least 20 intact natural teeth, without caries on the studied surfaces on 16, 11, 24, 31, 36 and 46 teeth, light chronic catarrhal

gingivitis, without orthodontic anomalies.

The studied teeth have been cleaned from tartar and plaque.

The volunteer patients have been given standard toothbrushes and tubes of "Deomint" toothpaste.

A checked brushing of the teeth and reporting of the indices took place on the 1<sup>st</sup>, 7<sup>th</sup>, 14<sup>th</sup>, 21<sup>st</sup> and 28<sup>th</sup> day, at least 8-12 hours after the last brushing.

The test was carried out in the following order:

1. Reporting of RMA index of Massler and Schour
2. Colouring of the plaque with 0.07% fuchsin solution
3. Reporting of PLI under Greene and Wermillion and the index of bleeding through probing.
4. Checked brushing of the teeth with 25 cm of the tested toothpaste for 2 minutes.
5. Reporting of PLI under Greene and Wermillion on the residual coloured and uncleaned plaque.

Each index is entered in a special registration card.

IKS is reported on the 0 day (before the clinical oral prophylactics), on the 1<sup>st</sup>, 14<sup>th</sup> and 28<sup>th</sup> day.

The statistical processing is made by the methods of variation and alternative analysis.

### RESULTS AND DISCUSSION

#### I. Plaque-cleaning effect

The analysis of the results gives us reasons to make the following statements:

1. The average values of PLI registered before brushing, gradually reduce and the differences become obvious on the 7<sup>th</sup>, 14<sup>th</sup>, 21<sup>st</sup> and 28<sup>th</sup> day compared with the first day ( $p < 0.001$ ).
2. After each checked brushing the average values of PLI reduce too. The difference becomes obvious on the 14<sup>th</sup>, 21<sup>st</sup> and 28<sup>th</sup> day compared with the first day ( $p > 0.05$ ) and remains such on the 7<sup>th</sup> day ( $p < 0.05$ ).
3. When comparing the average values of PLI before and after brushing, differences with very large precision are reported ( $p < 0.01$ ).

By brushing your teeth with "Deomint" toothpaste the available plaque is cleaned with average of 51.07%. No considerable difference is ascertained between each separate checked brushing ( $p > 0.05$ ) which

comes to show that the toothpaste has a stable plaque-cleaning effect. This is mostly due to the abrasives. Calcium carbonate is one of the most commonly used in Bulgaria. It has good cleaning properties supplemented by the second abrasive included in the toothpaste - silicon dioxide, which, apart from the plaque-cleaning effect, also has good compatibility with the active components used in the toothpaste.

#### II. Plaque inhibitory effect

The plaque inhibitory effect increases and reaches 17.78 % at the 28<sup>th</sup> day. The average inhibitory effect is 14.11%. The monofluorophosphate, which is a component of the toothpaste, has major influence here acting as an active component, as well as the checked brushing.

#### III. Anti-inflammatory effect

Light catarrhal gingivitis has been registered in 36 of all 42 volunteer patients prior to the beginning of the test. With the rest 6 patients the gingivitis was sound prior to the experiment and remained such afterwards. Therefore the toothpaste does not irritate the gingivitis.

The average reduction of RMA index is 32.14%, which assigns the toothpaste a place in the group of those ones with "good anti-inflammatory effect".

The anti-inflammatory effect can also be traced through IKS. The number of gingivitis areas which bleed when probed considerably increases compared to the zero and first day ( $p < 0.001$ ).

#### IV. Organoleptic properties

On the basis of a survey on the organoleptic prop-

erties of the toothpaste carried out through an inquiry among the volunteer patients, it was found out that it has pleasant taste and odour, very good foamy abilities, it creates freshness in the mouth, does not irritate the gums and does not have any side effects. The paste is valued as very good (52.38%) and good (47.62%).

95.24% of the volunteer patients would prefer brushing their teeth with it.

#### INFERENCE

1. The toothpaste has very good and stable plaque-cleaning effect.

2. Approximately 51.07% of the plaque are cleaned with the controlled brushing.

3. The toothpaste has medium plaque inhibitory effect - 17.78%.

4. The toothpaste has very good anti-inflammatory effect. The medium reduction of RMA index after the 28<sup>th</sup> day is 32.14%.

5. The toothpaste has good organoleptic properties.

#### CONCLUSION

"Deomint" toothpaste has very good plaque-cleaning, medium plaque-inhibitory and good anti-inflammatory effect. One of its components, the sodium monofluorophosphate will prove a caries prophylactic effect. The toothpaste can be rated as hygienic and prophylactic.

---

#### REFERENCES

1. Атанасов Б., Ботушанов П. Средства за хигиена, профилактика и лечение на устната кухина. Авторспектър, Пловдив, 2000
2. Weiswagner B., Stookey G., The comparative cariostatic efficacy of sodium fluoride and sodium monofluorophosphate dentifrices: a review of trials-J. Dent. Child., 56, 1989, 337-359
3. Johannsen G., Redmalm G., Ryden H. Cleaning effect of toothbrushing with three different toothpastes and water. Swed. Dent. J., 1993, 17(3):111-6
4. Jonson M. Comparative efficacy of NaF and SMFP dentifrices in caries prevention. A meta-analytic overview., Caries Res., 1993, 328-336

#### Address for correspondence:

Dr. Kremena Markova  
Department of Operative Dentistry and Endodontics  
Faculty of Stomatology, Medical University - Plovdiv  
24, Veliko Tarnovo Str., 4000 Plovdiv, Bulgaria  
e-mail: k\_drangova@abv.bg