

Bifluorid 12 – Treatment success

VOCO GmbH, Knowledge Communication Department

Anton-Flettner-Str. 1-3
27472 Cuxhaven, Germany

Tel.: +49 (0)4721-719-1111
Fax: +49 (0)4721-719-109

info@voco.de
www.voco.com



Bifluorid 12 has been an established fluoride preparation for many years. The effectiveness regarding the treatment of hypersensitivity as well as caries prophylactic effect has been examined in diverse studies.

Successful treatment of hypersensitivity

Hypersensitivity is a prevalent phenomenon: 10 - 20 % of the population suffers from sensitive teeth. Exposed tubules are mostly the cause for the increased sensitivity. In algesic patients, the number of tubules on the dentine surface is increased up to eight times and the tubules themselves have a diameter that can be up to twice the normal size. Although hypersensitivity is a prevalent phenomenon, treatment today is rather the exception than the rule. This has two causes: First, the pain occurs consistently when eating, brushing, eating ice cream, etc., but it is not a pain that is persistent or continuous. Secondly, the patient consequently often "forgets" to mention the pain during an unpleasant trip to the dentist. Some estimates of the prevalence therefore reach the 50 % mark.

Examination of the effectiveness of Bifluorid 12 in cases of hypersensitivity^[1]

The patients that participated in this examination were divided into three groups at the beginning of the testing: Patients with...

- a) Mild discomfort (ice-cold liquids, very hot food/drinks; 122 patients),
- b) Moderate pain (chilled/warm drinks; 320 patients),
- c) Severe pain (e.g., inhaled air; 158 patients).

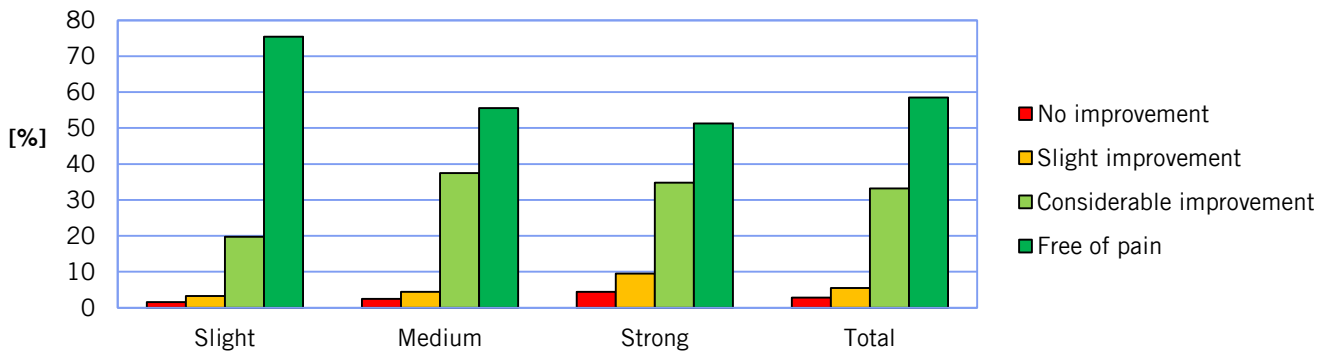


Figure 1: Treatment success depending on initial complaints

The patients were asked about their sensitivity after the varnish had been applied. The application was repeated (up to 5 time in cases of extreme pain) every 3 to 7 days in cases where improvement was not adequate.

- Considerable improvement
- Unchanged
- Worse

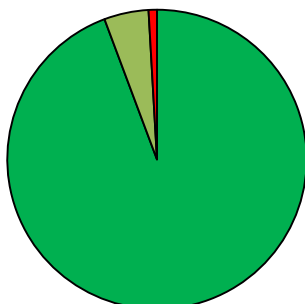


Figure 2: University of Glasgow study on treatment success in cases of hypersensitivity

The chart paints a clear picture. If the patients who reported a significant improvement or completely free from symptoms are added, the success rate increases to 92%. Even in the group of patients with severe problems, over half were totally free from symptoms after treatment with Bifluorid 12.

A study at the University of Glasgow ^[2] arrived at a similar conclusion. 94.3 % of the patients in this study, who were not further differentiated, showed significant improvement with respect to hypersensitivity after treatment with Bifluorid 12. This study thus confirms the results of the user survey and emphasizes the extraordinarily high success rate for a pharmaceutical product.

Both studies show that the unique combination of fluorides (6 % sodium fluoride and 6 % calcium fluoride) leads to effective sealing of the exposed dentine tubules. It was ascertained in these studies that treatment success usually occurred after the first application.

Effectively sealing the dentine tubules with the application of Bifluorid 12 was also visually examined using confocal laser scanning microscopy (CLSM).

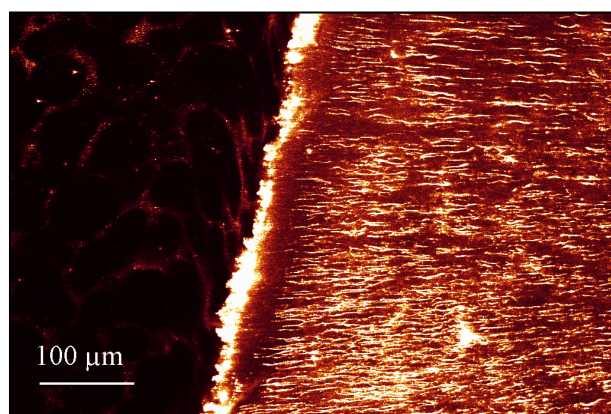


Figure 3: Tubule sealing with the application of Bifluorid 12, PD Dr. T. Pioch, University of Heidelberg

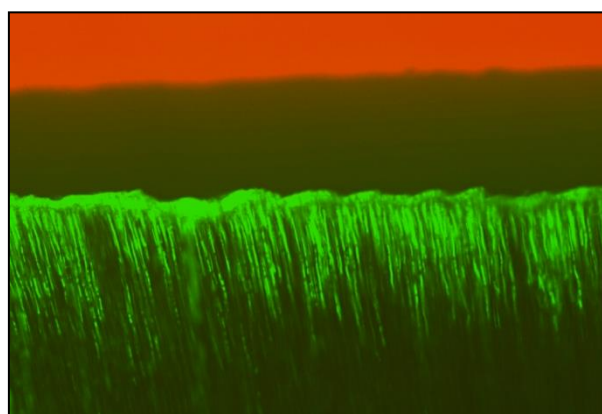


Figure 4: Tubule sealing with the application of Bifluorid 12, Prof. Dr. J. Uribe Echevarria, University of Cordoba, Argentina

Caries prophylactic effect

The cause for the caries protective effect of fluorides lies in the formation fluorapatite during the remineralisation process. Hydroxide ions (OH⁻) from hydroxyl apatite are replaced by Fluoride (F⁻) and the remineralisation is also generally accelerated. In addition, another reservoir of free fluoride ions is likely built. These occupy the spaces at the onset of demineralisation and leave behind hydroxyl ions. The resulting fluorapatite is considerably less sensitive to acids and caries. Bacterial adhesion is impeded due to the effect of the fluoride ions on the surface. Fluoride in higher doses also has an antibacterial effect - it prevents glycolysis and thus causes the metabolism of the bacteria to decelerate.

Examination of the caries prophylactic effect of Bifluorid 12

Borutta et al. studied the caries protective effect of Bifluorid 12 in a two year study.^[3] The caries development of 400 students between the ages of 12 and 14 was examined. 300 students received application of Bifluorid 12, while the control group received application of a placebo varnish. The caries inhibition was calculated by the percentage of caries development in the test and control groups. An effective caries prophylaxis could be determined for biannual application with ca. 25 % caries inhibition and even more than 30% with quarterly treatment (Figure 5).

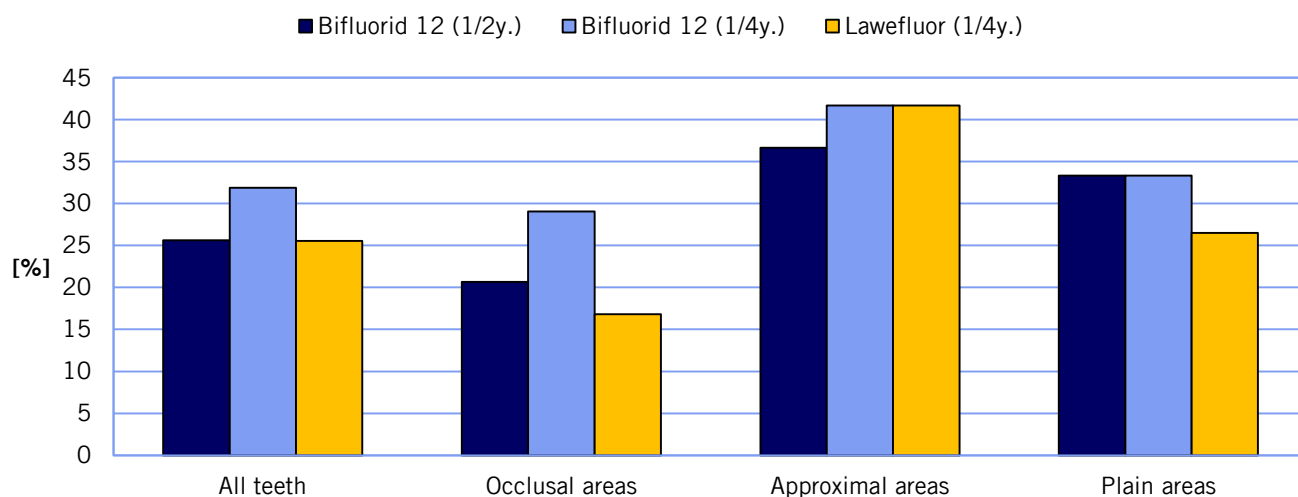


Figure 5: Caries inhibition [%] in comparison to the placebo group

It is remarkable that the biannual application of Bifluorid 12 is just as effective as quarterly application of Lawefluor, the competing preparation.

A study at the University of Tirana [4] in Albania also evaluated the effect of Bifluorid 12 on initial carious lesions. They determined the DeMFT Index (decayed enamel lesion, missing and filled teeth), an index that already incorporates initial carious lesions into the DMFT Index, in the test groups (a total of 92 subjects). The DeMFS and DeS indices (decayed surfaces) were also determined. The results after 7 months are displayed in Figure 6.

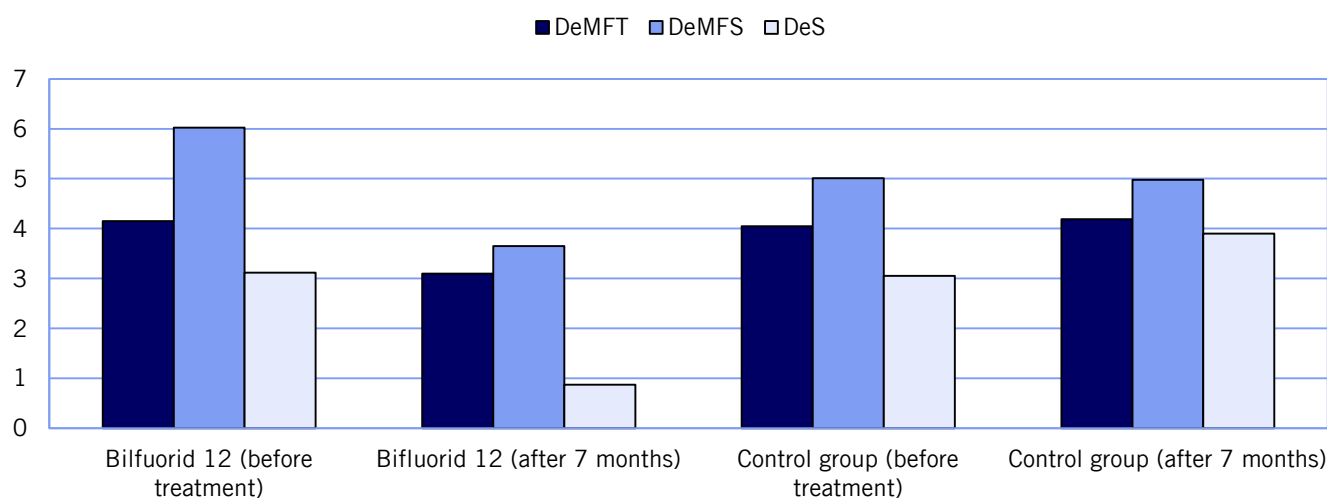


Figure 6: Successful treatment of initial carious lesions with Bifluorid 12 [4]

While the values remained the same in the control group after 7 months, the significant reduction of the indices with Bifluorid 12 application showed the potential in the treatment of initial carious lesions. The use of Bifluorid brought about a healing of the concerned teeth and the development of full-blown caries could virtually be prevented at the last minute.

Conclusion: Bifluorid 12 is highly effective for both the treatment of hypersensitivity and in caries prophylaxis. This makes Bifluorid 12 an all-purpose fluoride preparation.

[1] H.M. Artelt, *Swiss Dent.* **1994**, *15*, 9-13.

[2] F. J. T. Burke, R. J. Crisp; University of Glasgow Dental Hospital, 1998.

[3] A. Borutta, W. Künzel, F. Rüksam, *Dtsch. Zahn-Mund-Kieferheilkd.* **1991**, *79*, 543-549.

[4] L. Xhemnica, D. Sulo, R. Rroco, D. Hysi, *Eur. J. Paediatr. Dent.* **2008**, *9*, 93-96.