SCIENTIFIC REPORT

Bifluorid 12 – 3 year study of the caries prophylactic effect

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

The "caries inhibiting effect of Bifluorid 12 and its effectiveness with school children"[1] was examined in a clinically controlled 3 year study at the University of Minsk (Belarus) and the University of Jena (Germany). A total of 512 children who were in 1st grade at the beginning of the study were the participants.

The study summarised here was conducted with elementary school children from Minsk. In comparison to Western European children, they show increased caries prevalence, which is attributable to insufficient provision of fluoride and inadequate professional instruction on proper oral hygiene. The high caries risk of this group predestines it for investigations involving the prophylactic effect of high doses of local fluoride applications.

Study design

The test subjects were divided into 4 subgroups (A-D) at the beginning of the study. Group A was treated with Bifluorid 12, which features 6 % sodium fluoride and 6 % calcium fluoride as its active ingredients. Group B was treated with a 6 % sodium fluoride solution and Group C with a 6 % calcium fluoride solution to more closely examine the effectiveness of the individual fluoride salts. Group D served as the control group and thus did not receive any fluoride applications. Fluoridation began immediately after the base analysis and was conducted semi-annually.

Results of the study

Inhibition of caries growth (deciduous molars)

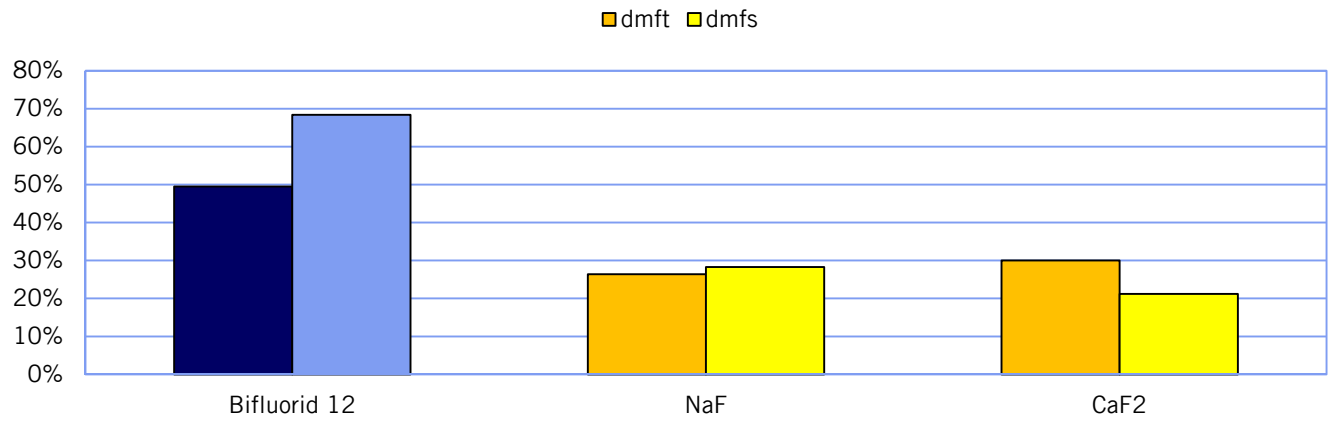

Figure 1: Inhibition of caries growth in deciduous dentition after 3 observation years

Only the data of the 4 deciduous molars were used for the determination of the caries growth inhibition. After 3 observation years, the values of the test groups exhibited significant differences among themselves as well as to the control group. The best results were achieved in the group with the children treated with Bifluorid 12, both on the dmft (49.5%) and dmfs (68.4%)

Inhibition of caries growth (permanent molars)

There were significant differences between the test groups in the analysis of the caries growth in the first permanent molars. The application of a pure sodium fluoride-based varnish yielded the lowest caries inhibition, while Bifluorid 12, a combination of sodium fluoride and calcium fluoride, effectuated the most caries inhibition. The authors also used the high concentration of fluoride to explain the "higher caries inhibition values in comparison to studies with Duraphat (Colgate).

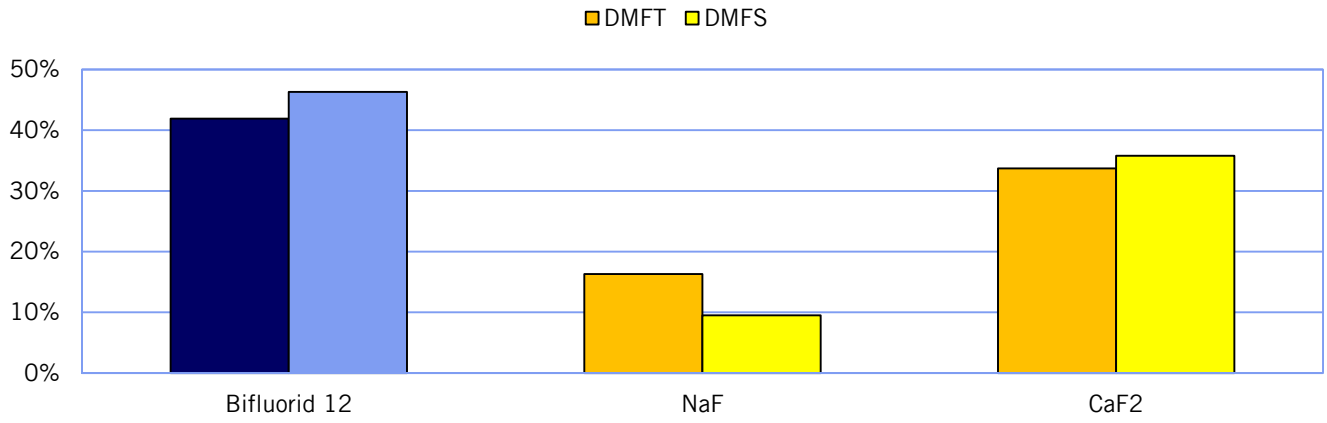

Figure 2: Inhibition of caries growth in permanent dentition after 3 observation years

Both sodium fluoride and calcium fluoride alone have a prophylactic effect, as was previously observed with the caries inhibition in deciduous dentine. The combination of the two fluoride salts in Bifluorid 12 is indeed more effective than the effect of the individual salts.

Conclusion: With its unique combination of sodium and calcium fluoride, Bifluorid 12 exhibits high caries prophylactic effectiveness and effectively contributes to the preservation of teeth.

[1] A. Borutta et al., Universitätsklinikum Jena, Bericht an VOCO 2009, data on file