Anterior Openbite in 27 Months old Children after Pacifier Use

S. ZIMMER[1]*, H. Zuralski[2], M. Bizhang[2], C.R. Barthel[1]
[1]) Dept. of Operative and Preventive Dentistry, University of Witten/Herdecke, Witten, Germany
[2]) Dept. of Operative Dentistry, Periodontology, and Endodontics, Heinrich Heine University Duesseldorf, Germany

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Introduction

Since non-nutritive sucking (NNS) seems to reduce the incidence of sudden infant death syndrome, the use of pacifiers should not be longer discouraged. On the other hand, NNS is known to cause changes in dental occlusion such as open bites.

Aim

To evaluate the efficacy of a novel pacifier in preventing anterior openbite in 27 months old children in a clinically controlled study.

Materials and Methods

At the University Hospital of Duesseldorf (Germany), 129 new born children whose parents had decided to use pacifiers were randomly attributed to two experimental groups (D=Dentistar, n=56, Novatex, Pattensen, Germany; N=NUK, n=73, Mapa, Zeven, Germany). Parents were advised to use only the allocated pacifier. Children (n=42) who did not use a pacifier served as control (C). Exclusion criteria were preterm birth (<8th month pregnancy), congenital maxillofacial defects and systemic diseases of the infant. At an age of 27 months, the children were re-examined (operator blind) with respect to occlusion and existence of an anterior open bite. ANOVA and chi^2-test served for statistical analysis (SPSS 17.0).

Figures 1-4: Dentistar (left) and NUK (right) pacifiers

Results

At the final examination 50 children did not show up resulting in 121 children (64 female, 57 male) that could be included in the final analysis (D: n=45; N: n=42; C: n=34). The mean age was 26.7 (SD 3.1) months (D=26.8; N=26.6; C=26.7, ANOVA: n.s.).
Three children from group D (6.7%) showed anterior openbite. The respective values were 21 (50%) for N and 0 for C. The incidence of openbites was significantly less in in group D and C when compared to N (chi^2-test, p<0.001). No significant difference was found between D and C (chi^2-test, p<0.001). Regular occlusion (Angle's class I) was found in 39 (88.6%) subjects in group D, 39 (95.1%) in N, and 33 (97.1%) in C. No statistically significant difference between groups was found with respect to regular occlusion (chi^2-test, p>0.05).

Table 1: Age and occlusal conditions in relation to group

	Dentistar (n=45)	NUK (n=42)	Control (n=34)
Mean age (SD)	26.8 (3.0)	26.6 (3.8)	26.7 (2.6)
regular occlusion (Angle's class I) cases (%)	39 (88.6%)	39 (95.1%)	33 (97.1%)
anterior open bite cases (%)	3 (6.7%)	21 (50.0)	0 (0%)

Horizontal bars indicate statistically significant differences at p<0.001 (ANOVA, chi^2)

Conclusions

Pacifier use may promote the incidence of openbites in 27 months old children. In comparison to a commonly used pacifier the novel one caused significantly less anterior openbites and can be recommended for children up to 27 months of age.