

REDUCTION OF ABDOMINAL COLIC IN INFANTS BY USING BOTTOM VENTILATED BOTTLES



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Objective:

Abdominal colic is a frequent problem in early infancy. However, even though numerous studies can be found on the subject, the cause of abdominal colic is still unknown. Among other methods, ventilated bottles are discussed as a tool to reduce the symptoms in colicky babies.

Hypothesising that swallowed air might play a role in the development of infantile colic, it was aim of this study to investigate a bottom-ventilated baby bottle (MAM Anti-Colic) concerning its effect on infant behaviour in a longitudinal study.

Material:

The study group consisted of 73 infants (51 % male) with a median age of 7 weeks. For all infants enrolled in the study, their parents had reported symptoms qualifying them as "colicky babies".

Methods:

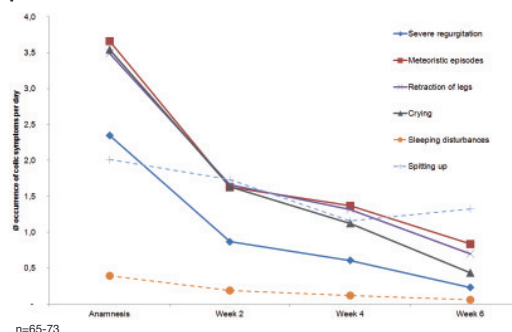
Parents were instructed to exclusively use the bottom-ventilated bottle for several weeks. A semi-structured questionnaire was applied to evaluate the babies' complaints by telephone interview at 0, 2, 4 and 6 weeks. To evaluate the difference in colic over time, mean differences were computed by using one-way ANOVA, using Leven's test of equality of error variances for testing homoscedasticity. For multivariate analysis, a general linear model was applied, including age and sex of the babies as well as the duration of colic before anamnesis as control variables.

Results:

Following intervention, a significant reduction in frequency was observed for meteoristic episodes, crying, retracting the legs and severe regurgitation two weeks after the children used the bottle ($p < .001$). In contrast, no significant difference was seen for sleeping disturbances and spitting up (see figure 1). During the following weeks no further significant improvement could be observed in all symptoms. At the end of the study 79.3% of

all participating mothers stated that the bottom-ventilated bottle has a reducing effect on colic.

Figure 1: Reduction of colic symptoms during study period



To explain the significant symptoms reduction between the start of the study and two weeks after using the bottom-ventilated bottle an additive index including all observed symptoms was created and used as dependent variable. In multivariate analysis of variance, none of the standard treatments like abdominal massage, simethicone or the included control variables could significantly contribute to the observed overall improvement. All standard treatments explain only 6.9% (adjusted R^2) of the overall reduction of symptoms.

Table 1: Univariate analysis of variance

Independent variables	F	Sig.	Partial Eta ²
Age	3.164	.082	.062
Duration of colics	.471	.496	.010
Gender	2.541	.117	.050
Wind Ointment	1.127	.294	.023
Cherry Seed Bags	2.982	.091	.058
Simethicon	.007	.933	.000
Football Hold	2.597	.114	.051
Abdominal Massage	3.921	.053	.076
Fennel Tea	.830	.367	.017
Fever Thermometer	.798	.376	.016
Homoeopathic Treatment	2.735	.105	.054

$R^2 = .243$ (Adjusted $R^2 = .069$); $n=60$

Dependent Variable: Difference of symptoms between anamnesis and 2 weeks follow up

Conclusions:

Bottom-ventilated baby bottles appear to reduce the clinical symptoms in colicky babies. It may therefore be speculated that aerophagia may be at least a contributing factor in the development of feeding-associated infantile colic.

References:

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- 3) Lucassen PL, Assendelft WJ, Gubbels JW, van Eijk JT, van Geldrop WJ, Neven AK. Effectiveness of treatments for infantile colic: systematic review. *BMJ*, 1998; 316; 1563-9