

ICCN Poster Presentations

Diet, gut microflora and health

The comparison of *Haemophilus influenza* in the throat of healthy infants with different feeding methods

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Introduction: *Haemophilus influenza* (HI) is the most commonly found pathogenic bacteria in pediatric otitis media and lower respiratory tract infections. Bacterial attachment to pharyngeal cells and proliferation may be necessary for infection. In presence of human milk, attachment of HI to pharyngeal cells and colonization may be inhibited. To evaluate the protecting role of breast milk, we investigated the incidence of HI isolated from the throat of healthy infants with different feedings methods.

Methods: Between August 2002 and March 2003, 210 healthy (70 breast-fed, 70 formula-fed, 70 mixed-fed), aged 1-6 months were enrolled to study and a throat culture was taken in all of them. The incidence of HI evaluated by using a standard microbiological procedure in *Haemophilus* Test Agar Bose (HTAB) plates.

Results: The incidence of HI in exclusively breast-fed, mixed-fed and exclusively formula-fed infants was 2.9%, 42.9% and 75.7% respectively, ($P < 0.0001$). The mean age and weight of cases in 3 groups were not statistically different.

Conclusion: These data suggest that the human milk has a protective effect in colonization of HI in the throat of healthy infants especially in exclusively breast-fed cases.

Key words: breast milk, *Haemophilus influenza*, throat culture

Symbiotic containing *Bifidobacterium animalis* and inulin increases stool frequency in elderly healthy people

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Background: the aim of the study was to investigate the effect of a symbiotic on gut microbiota and bowel habits.

Methods: a double-blind, placebo-controlled, randomized crossover study was conducted in healthy elderly people (n=49; mean age 70 ± 4 years) over a total of sixteen weeks divided into periods of 4 weeks each, (1) run-in, (2) first intervention, (3) wash-out, and (4) second intervention. During the intervention periods study participants consumed daily sachets either containing the symbiotic or a placebo. The symbiotic contained *bifidobacterium animalis* and inulin. During the study subjects regularly completed questionnaires on bowel habits, well-being, gastrointestinal quality of life and underwent a medical examination. At the end of each intervention period the volunteers reported their dietary intake using a 4-day food record and provided a fresh faecal sample for the analysis of microbial and other parameters.

Results: the habitual dietary intake remained constant over the entire period of investigation. The consumption of the symbiotic resulted in a significant increase of stool frequency compared to the placebo period (8.8 vs. 8.1 stools per week; $p < 0.05$). Among other gastrointestinal symptoms, eg. Bloating, flatulence, no differences between the treatment and placebo periods could be found. For several parameters of well-being a significant positive influence of the symbiotic treatment could be demonstrated. The characterization of the microbial composition using fluorescence in-situ hybridization and enzymatic analyses are in progress.

Conclusion: the administration of a symbiotic consisting of *bifidobacterium animalis* and inulin improves well-being and gastrointestinal quality of life in elderly subjects.