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Programme:

Saturday, Feb.12, 2011
Time: 10:00 – 10:30

Speaker:

Prof. Berthold Koletzko, MD, PhD

Lecture:

Probiotics in Paediatrics:
What Evidence Says

PROBIOTICS IN PAEDIATRICS: WHAT EVIDENCE SAYS

The human gut flora comprises some 500 – 1,000 species with about 10^{14} bacteria. While some gut bacteria are potentially harmful, others are potentially beneficial for the host. The foetal gut is practically sterile, but colonization occurs rapidly after birth. Initially, the maternal gut flora is the most important source. Infant gut bacteria also depend on the mode of birth, mode of feeding, the use of antibiotics, the exposure to bacteria and the age of the host. Compared to formula-fed infants, breast-fed infants tend to show lower rates of colonisation with clostridia, but higher colonisation rates with bifidobacteria as well as differences in the composition of the bifidobacteria species. The microflora of the colon exerts important physiological effects on the host organism, e.g. with regards to gastrointestinal infections, mucosal growth and barrier function, and the gut associated lymphoid tissue and the secretion of immunoglobulin A. Based on the knowledge in this area, the concepts of providing with the diet probiotics, prebiotics, synbiotics or postbiotics evolved. Probiotics are live bacteria that have beneficial effects on human health, such as some lactobacilli strains. Prebiotics are certain

non-digestible carbohydrates that specifically stimulate bacteria with beneficial effects on the host organism. Synbiotics are combinations of probiotics and prebiotics that again exert beneficial health effects to the host. The term postbiotics is used for components derived from non-viable bacteria. Studies on supplying certain probiotic strains to infants and children demonstrated that some significantly shorten the duration of infectious gastroenteritis, particularly of rotavirus infections, and some studies also showed preventive effects. First indications exist for possible benefits in chronic inflammatory bowel disease, and for the risk of allergic or atopic disease. The available data is very promising and indicates the potentially important role of early gut colonisation for child health. More studies on the underlying mechanisms, the role of different bacterial species, the effects of various dietary components and other exogenous factors and on various health-related outcomes might lead to further opportunities for health prevention. Effects of various probiotic interventions differed markedly. Therefore, one should refrain from concluding on the general effects of probiotics but rather evaluate the effects of specific bacterial strains on defined outcomes.