

16

NORMAL VALUES FOR ARTERIAL STIFFNESS IN A LARGE COHORT OF HEALTHY CHILDREN AND ADOLESCENTS

D. Kracht¹, A. Doyon², C. Jacobi¹, F. Schaefer², B. Schmidt³, S. Sorrentino³, E. Wühl², A. Melk¹

¹Paediatric Nephrology, Hannover Medical School, Hannover, ²Paediatric Nephrology, University Hospital Heidelberg, Heidelberg, ³Nephrology, Hannover Medical School, Hannover, Germany

Background and aims: Aortic pulse wave velocity (aPWV), an early indicator of arterial stiffness, predicts cardiovascular mortality risk in adults. Since children with kidney disease have a high risk for cardiovascular mortality later in life, early detection of advanced arterial stiffening would be important. In childhood, aPWV has not been investigated in larger cohorts. The aim of this study was to provide normal values and to prove the suspected increase with age.

Methods: Pulse waves were captured by oscillometry simultaneously on the right carotid and femoral artery (Vicorder) in 405 healthy school children aged 6 to 18 years. In addition, we measured intima-media thickness (IMT) and elasticity on both carotid arteries by B- and M-Mode ultrasound.

Results: aPWV significantly increased with age. 6-8 year olds (n=97): 4.2±0.4 m/s; 9-11 year olds (n=135): 4.5±0.4 m/s; 12-14 year olds (n=97): 4.9±0.5 m/s; 15-18 year olds (n=76): 5.2±0.5 m/s (p< 0.0001). aPWV significantly correlated with age (r=0.63, p< 0.0001). Further significant correlations: weight, height, mean systolic and diastolic blood pressure. aPWV did not correlate with IMT, but significantly with elasticity parameters: incremental elastic modulus (r=0.43, p< 0.0001), distensibility coefficient (r=-0.42, p< 0.0001). Independent predictors for aPWV in multiple regression analysis were: age, gender, diastolic blood pressure and elasticity parameters.

Conclusions: This study defines normal values for aPWV in children and adolescents using a new non-invasive oscillometric method. Even in healthy young individuals we detected correlations to cardiovascular risk factors. Interestingly, a connection of aPWV to functional parameters of arterial elasticity was observed.

17

THE EFFECT OF ENTERAL SUPPLEMENTATION OF NEUTRAL AND ACIDIC OLIGOSACCHARIDES ON THE RESPONSE TO VACCINATIONS IN PRETERM INFANTS

J.P. van den Berg¹, E.A.M. Westerbeek¹, G.A.M. Berbers², F.R.M. van der Klis², H.N. Lafeber¹, R.M. van Elburg¹

¹VU University Medical Center, Amsterdam, ²National Institute for Public Health and the Environment, Bilthoven, The Netherlands

Background and aims: We aimed to determine the effects of enteral supplementation of a prebiotic mixture of neutral and acidic oligosaccharides (_{SC}GOS/_{LC}FOS/AOS), who are supposed to improve the development of the immune system and therefore improve the immune response to DTaP-Hib vaccinations in preterm infants.

Methods: In a RCT, preterm infants with a gestational age < 32 weeks and/or birth weight < 1500g received enteral supplementation of _{SC}GOS/_{LC}FOS/AOS or a placebo (maltodextrin) between days 3-30 of life. Serum samples were taken at 5 and 12 months of age, after the 3th and 4th vaccination respectively. Samples were analyzed by multiplex immune assay (MIA, Luminex).

Results: In total, 89 preterm infants at 5 months and 85 infants at 12 months were included. Baseline patient and nutritional characteristics were not different between both groups. Results are shown in table 1. No significant differences were shown (all p>0.05).

Table 1. Vaccination response of preterm infant at 5 and 12 months.

	Ptx (EU/ ml)	FHA (EU/ ml)	Prn (EU/ ml)	Dtx (IU/ ml)	Ttx (IU/ ml)	Hib (µg/ ml)
	5 12 m	5 12 m	5 12 m	5 12 m	5 12 m	5 12 m
_{SC} GOS/ _{LC} FOS/ AOS	35 52	71 121	72 118	0.36 0.88	0.72 1.63	0.37 2.67
Placebo	44 66	96 119	80 106	0.57 1.14	0.99 1.86	0.63 2.87

[Table 1]

Conclusions : Enteral supplementation with the prebiotic mixture of neutral and acidic