

Influence of endothelial dysfunction and perinatal factors on atopic disease in preterm children

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Atopic diseases accompanied by inflammatory disorders, morphological and functional alterations of microvessels, especially in preterm baby. We established clinical significance of endothelial dysfunction and perinatal factors in preterm infants with atopic diseases.

The main group 15 children, who in adjusted age of 12 months was diagnosed atopic disease (atopic dermatitis, food allergy). The average birth weight 1473,1±97,4 g, gestational age - 29,9±0,6 weeks. In the comparison group included 24 premature infants with birth weight 1529,5±82,8 g and gestational age 30,6±0,6 weeks without atopic diseases.

Found that children with atopic diseases was significantly ($p<0,05$) more likely to have been born to mothers who had a history of chronic urogenital infections 46,7% (Sp 72,4%, Se 70,0%), abortions, miscarriages 53,4% (Sp 73,0%, Se 61,5%). 35,7% children with atopic diseases born by C-section. Children from the main group significantly more often after birth need of mechanical ventilation 73,4% (Sp 78,9%, PPV 73,4%) vs. 37,5% ($p<0,05$). In the neonatal period in 33,4% of children with atopic diseases were diagnosed small to gestational age (Sp 70,6%, Se 100,0%) and 20,0% of children - patent ductus arteriosus (Sp 66,7%, Se 100,0%) ($p<0,05$).

The obtained values of VEGF in serum for 5-7 days of life in children of all studied groups did not significantly differ (main group - 175,5 ± 52,6 and 134,6 ± 28,6 pg/ml in the comparison group, $p>0,05$). In dynamics, at 28 days of life in children with atopic diseases observed increase in VEGF - 399,5 ± 93,4 pg/ml ($p<0,05$), compared with 208,5 ± 90,2 pg/ml in the children without atopic diseases, $p>0,05$. VEGF level have a high degree of specificity and sensitivity (> 60%).

Regression analysis established the relationship between values of serum VEGF at 5-7 day of life and indicators of body weight ($r=0,62$, $p<0,05$), duration of gestation at birth ($r=0,64$, $p<0,05$) and duration of mechanical ventilation ($r=0,89$, $p<0,05$)

Several maternal characteristics, perinatal factors, VEGF level are associated with an elevated risk of atopic diseases in the child in later life.