**Biochemical markers of endothelial dysfunction in children with Henoch-Schönlein purpura.**

**Introduction:** Henoch-Schönlein purpura (HSP) is a leader in the structure of systemic vasculitis in children. The aim of the study was to investigate biochemical markers of endothelial dysfunction in children with HSP.

**Material and methods:** 60 children aged 1 to 17 years old (35 males, 25 females) with HSP were examined among them 8 (13.3%) patients with skin form (1st group), 24 (40%) patients with skin-articular form (2nd group), 19 (31.6%) patients with mixed form (skin-articular and abdominal syndrome) HSP (3rd group) and 9 (15%) patients had mixed form with renal syndrome (4th group). The control group included 17 healthy children. The serum levels of NO\textsubscript{2}, NO\textsubscript{3} and S-nitrosothiols were determined spectrophotometrically. Serum MCP-1 was measured at enrollment using a sensitive ELISA assay. The levels of Von Willebrand factor (vWF) were determined in plasma by aehrometric method. The data were analysed with StatSoft STATISTICA Version 8 (Tulsa, OK). Statistical significance was derived using non-parametric tests (Mann-Whitney test and Kruskal-Wallis test).

**Results:** The results of Kruskal-Wallis test for all parameters are significant, namely: NO\textsubscript{2} – H=18.7, p=0.0009, NO\textsubscript{3} – H=27.3, p=0.0000, S-nitrosothiol – H=29.7, p=0.0000, vWF – H=49.8, p=0.0000, MCP-1 – H=50.1, p=0.0000. As follows, statistical characteristics of indicators of different groups are statistically different, and the levels of parameters which were investigated, depend on form HSP. The serum levels nitric oxide metabolites levels (NO\textsubscript{2}, NO\textsubscript{3}, S-nitrosothiol) were significantly diminished in the patients of the 4th group (p\textsubscript{c-4}=0.0000, p\textsubscript{c-4}=0.0000, p\textsubscript{c-4}=0.0000, respectively) compared with controls. The serum levels of nitric oxide metabolites were increased in the patients of 1st 2nd and 3rd groups compared with controls. The serum levels of vWF and MCP-1 were higher in the patients of all groups in comparison to the control children. (p\textsubscript{c-1}=0.0000, p\textsubscript{c-2}=0.0000, p\textsubscript{c-3}=0.0000, p\textsubscript{c-4}=0.0000; p\textsubscript{c-1}=0.0000, p\textsubscript{c-2}=0.0000, p\textsubscript{c-3}=0.0000, p\textsubscript{c-4}=0.0000, respectively).

**Conclusion.** Biochemical markers of endothelial dysfunction in children depend of form HSP. The reduced levels nitric oxide metabolites levels in children with HSP may be early marker of kidney injury.