

by 6-minute walk test (+152,5±17,4 m at 6 months and +184,3±21,2m at 12 months of treatment), ( $p<0,001$ ); the decreasing of mean PAP, with 22,0±2,22 at 6 months and with 19,03±2,3 mmHg at 12 months ( $p<0,001$ ) and PVRI had decreased with 2,45±0,19 UW·m<sup>2</sup> ( $p<0,001$ ); the improvement of the systolic function, TAPSE from 16,55±0,34 to 20,7±0,64 mm/m<sup>2</sup> ( $p<0,001$ ) and global function of RV (Tei index) with 0,15±0,01(-31%) to initial ( $p<0,001$ ). In placebo group the respective signs slightly changed and only PVR diminished from 6,4±0,1 to 5,7±0,3 UW/m<sup>2</sup> ( $p<0,05$ ). There was no death in the sildenafil-treated cases, contrary to 5 in the placebo group.

**Conclusions:** Sildenafil is efficient in treating PH secondary to congenital systemic-to-pulmonary shunts, but even more effective in corrected surgical shunts. Sildenafil improves FC, tolerability at effort, O<sub>2</sub> sat, systolic and global function of RV, diminishing PAPm and PVRI comparing with placebo. This remedy has good tolerability, with minors and insignificant adverse reactions and favourable impact on the quality of life.

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**VASODILATORS AND VASOCONSTRICTORS (NO AND ENDOTHELIN-1)  
IN CHRONIC HEART FAILURE IN CHILDREN**

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Endothelial dysfunction in chronic heart failure (CHF) secondary to congenital systemic-to-pulmonary shunts (CSPS) associated with Pulmonary Arterial Hypertension (PAH) conducts to chronically impaired production of vasodilator and antiproliferative agents, e.g. NO, further leading to the overexpression of vasoconstrictor and proliferative substances - endothelin-1 (ET-1).

**The aim:** To accentuate the pathophysiological particularities of NO and ET-1 in CHF secondary to CSPS associated with PAH.

**Methods and materials:** Seventy children with CHF secondary to CSPS associated with PAH (mean age 37,4±3,4 months) were involved in the study. The patients were separated into 3 groups: 1<sup>st</sup> – 16 pts with CHF and PAH moderate, and 2<sup>nd</sup> – 54 pts with CHF (the majority with RV's dysfunction) and PAH severe, 3<sup>rd</sup> - 16 pts with CHF and without PAH. 15 health children with innocent cardiac murmur constituted the witness group. The groups were comparable w.r.t. the age and sex. Using ELISA method (DRG International Inc., SUA) NO and ET-1 were determined.

**Results:** Patients with CHF and PAH moderate had a higher level of NO - 116,45±6,1 fl mol/l comparing to children with PAH severe - 93,06±3,34 ( $p<0,05$ ) and to those with CHF but without PAH - 90,91±4,07 ( $p<0,05$ ), and versus the healthy children - 77,32±5,1 ( $p<0,001$ ). In PAH severe the pulmonary vasodilators' mechanisms with the diminishing of NO got worse. ET-1 had higher values in children with PAH severe - 7,78±0,28 pg/ml with high statistical significance w.r.t. patients with PAH moderate - 3,88±0,21, vs those without PAH - 3,69±0,24 ( $p<0,001$ ) and healthy - 2,9±0,27 ( $p<0,001$ ). The hemodynamic stress within the CSPS associated with PAH is responsible for the endothelium's lesion which leads to the stimulation of ET-1 production by the endothelium cells.

**Conclusions:** The overall results reveal the major role ET-1 and NO in pathophysiology of PAH secondary to CSPS with CHF. At patients with CHF and PAH severe the endothelium's lesion leads to a disequilibrium between the production of the mediators with vasodilators effects and those with vasoconstrictor properties; at patients with PAH moderate the NO level being significantly higher vs those with PAH severe, while the ET-1 values were higher at pts with PAH severe vs those with a moderate level and without PAH.

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**FACTORII DE RISC CE CONTRIBUIE LA APARIȚIA MALFORMAȚIILOR RENOURINARE LA COPIL  
RISK FACTORS ASSOCIATED WITH CHILDHOOD URINARY TRACT MALFORMATIONS DEVELOPMENT**

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**Introduction:** Amongst all of the analyzed factors for urinary tract anomalies development in children the highest risk correlated with genetic factors followed by administration of pharmacological drugs in pregnancy. The next factor was shown to be maternal smoking. The fourth risk factor was maternal age beyond 35 years at delivery time and for women who were alcohol-consuming during pregnancy the risk reached the level of 3,35. All other studied risk factors were found to have no influence on the development of fetal.

**Obiective:** Determinarea factorilor de risc ce contribuie la apariția malformațiilor renourinare la copii.

**Material și metode:** În total au fost supuse cercetării 500 de femei cu sarcină de peste 18 săptămâni. Din numărul total de femei, la 148 (29,6%) s-au determinat schimbări patologice intrauterine ale sistemului reno-urinar la făt, inclu-