| 367 | CLINICAL AND MOLECULAR FACTORS PREDICTING STEROID RESISTANCE IN PEDIATRIC NEPHROTIC SYNDROME |

Ievgeniia Burlaka*, Mitiuriaeva-Korniyko Inga, Bagdasarova Ingretta. *Bogomolets National Medical University*

Introduction. Nephrotic syndrome (NS) is a kidney disease characterized by albuminuria, hyperlipidemia, edema, and hypoalbuminemia. Recent data shown that more than 80% of children with nephrotic syndrome respond to steroid treatment, remain steroid-sensitive during subsequent relapses, and consequently have a favorable long-term prognosis. Steroid resistance is believed to be associated with a high risk of developing chronic renal failure. Recent reports suggest different clinical, genetic and molecular markers to be accompanied with phenomenon of steroid resistance. However, molecular markers controlling apoptosis have not been studied as a predictors of steroid resistant NS (SRNS) and steroid sensitive NS (SSNS).

Aim of the study. To identify clinical and molecular markers of the steroid-resistance phenomenon in children with NS.

Methods We analyzed 56 clinical cases of children hospitalized in Pediatric Hospital №7 (Kyiv, Ukraine) with NS (26 SSNS and 30 SRNS). Clinical data (age, gender, disease duration, blood pressure), conventional laboratory markers (serum creatinine, serum urea, GFR, blood WBC, PLT), markers of apoptosis (BcL-xL, caspase-3, caspase-8, NF-kappa B) analyzed. Stepwise logistic regression models use to identify candidates with the potential to be related to have influence of steroid resistance in children with NS. Data processed using GraphPad Prism 9.0 Software for Windows (USA, San Diego, CA).

Results Stepwise logistic regression models identified arterial hypertension as a candidate among clinical characteristics (β: -0,3057; SE: 0,1487; 95% confidence interval [CI]: -0,6042 to -0,007281, p<0,05) as a candidate predictive of SRNS.

Among conventional clinical markers Serum creatinine (OR: 1.04; 95% CI: 0.95–1.1), Serum urea level (OR: 1.03; 95% CI: 0.83–1.3), WBC level (OR: 1.4; 95% CI: 1.1–1.8) identified as candidates predictive SRNS.

In addition, logistic regression analysis identified BcL-xL (OR: 1.3; 95% CI: 1.1–1.5) and caspase-3 (OR: 1.5; 95% CI: 1.2–1.9) as a markers controlling apoptosis and predisposing SRNS.

Conclusion Arterial hypertension, Serum creatinine level, Serum urea level, WBC count, BcL-xL and caspase-3 levels indentified as candidate biomarkers to predict SRNS in pediatric NS.

| 368 | AGE-SPECIFIC EXCRETION OF CALCIUM, OXALATE, CITRATE, AND GLYCOSAMINOGLYCANS AND THEIR RATIOS IN HEALTHY CHILDREN AND CHILDREN WITH UROLITHIASIS |

Daniel Turudic, Anja Tea Golubic, Marko Bilic, Danko Milosevic*. *University of Zagreb, School of Medicine; General Hospital Zabok and Croatian Veterans Hospital, Zabok, Croatia*

We analyzed children with urolithiasis with age- and gender-matched healthy children as a retrospective study to ascertain any differences in urinary stone formation.

The study was conceived as a retrospective analysis of urinary stone disease in children from different parts of Croatia who had been treated for at least one urinary stone occurrence. For the urine samples to reflect a natural nutrient and fluid intake, the children were on a free diet. For the measurement of Ca, Ox, Cit, and creatinine, 24-hour urine collection was performed three days in a row. We used 24-h samples instead of 2-h morning or 12-h urine samples to acquire Ca, Ox, Cit, GAGs, and creatinine excreted in urine as accurately as possible. Urine excretion of Ca (mmol/mmol creatinine), Ox (mmol/mol cr), Cit (mmol/mol cr), GAGs (mg/mmol cr), Ca/Cit (mol/mmol), Ox/GAGs (mmol/g), Ox/Cit (mmol/mmol), Ox/(Cit×GAGs) (mol Ox × mol cr)/(mol Cit × g GAGs), and Cit/GAGs (mmol/g) were analyzed. Data analysis was performed by using Statistica for Windows version 8 and GraphPad Prism version 5. Additionally, J48 classifier was used to construct classification model for discrimination between subgroups Calcium (mmol/mmol creatinine) and the calcium/citrate ratio (mol/mmol) are the only variables that differentiate children before puberty from healthy children (ROC analysis confirmed only calcium/citrate as a significant variable with cut-off value > 0.84). Pubertal/postpubertal children are distinguished from age- and gender-matched healthy children by the following variables: citrate (mmol/mol creatinine), calcium/citrate (mol/mmol), oxalate/glycosaminoglycans (mmol/g), oxalate/citrate ratios (mmol/mmol) and oxalate/(citrate × glycosaminoglycans) (mol oxalate × mol creatinine)/(mol citrate × g glycosaminoglycans), all were confirmed by ROC analysis with cut-off values ≤ 327.87, > 1.02, > 11.24, > 0.12, > 0.03, respectively.

These results indicate a different risk of urinary stones development before puberty vs. pubertal/postpubertal children and increasing importance (deficiency) of citrate and glycosaminoglycans in such children. J48 classifier confirmed the importance of the oxalate/(citrate × glycosaminoglycans) and the calcium/citrate ratios with the practically applicable classification tree for distinguishing between pubertal/postpubertal children with urolithiasis with age- and gender-matched healthy children.

| 369 | A SUCCESSFUL RESOLUTION OF NUTCRACKER SYNDROME WITH 3D PRINTED PEEK EXTRAVASCULAR STENT IN AN ADOLESCENT BOY |

Da-li He, Heng-en Wang, Yong Jiao, Bin Wu, Dong Cui, Yan-yan Li, Yong Yang, Tie-sheng Cao, Vinko Vidjak, Danko Milosevic*, Bo Zhang. *University of Zagreb School of Medicine; General Hospital Zabok and Croatian Veterans Hospital, Zabok, Croatia*

Three-dimensional printed PEEK extravascular stent was applied to treat a 14-year-old boy with nutcracker syndrome. Digital subtraction angiography revealed a segment of the left renal vein with reduced contrast filling immediately before its inflow into inferior vena cava and high-pressure gradient. The three-dimensional reconstruction model demonstrated that the LRV and the duodenum were contracted at the aortomesenteric angle, resulting in left renal vein compression from the