emptying disorders is the malfunctioning of the detrusor and/or the sphincter muscles.

During the 34-year study period, 4965 paediatric urodynamic examinations were performed. 551 children had video-urodynamic examinations, 210 had cystoscopy, and 4,215 had uroflow and ultrasound.

Videourodynamic showed normal functioning in 74 patients, vesicoureteral reflux in 301 children, and detrusor dysfunction with increased activity in 182 cases. Neurogenic bladder dysfunction was present in 51 patients, outflow disorder in 18 patients, and wide bladder neck in 23 patients.

Vaginal reflux was confirmed in 11 cases. Simple uroflow showed reduced urinary flow with residuum in 60, 43 without residuum, increased urinary flow in 1275 cases, intermittent urinary flow with residuum in 320 cases and regular urinary flow without residuum in 2517 cases.

Urodynamic examinations are needed to accurately diagnose abnormalities in the lower urinary tract.

Case presentation: a 14 year-old female patient presents with fever (39.8 degrees Celsius), emesis and abdominal pain. Fever started four days earlier, was unremitting to antipyretics and prompted an initial ED visit after two days when leukocytosis with neutrophilia (17.17 x 103/mm3 and 14.31 x 103 respectively), elevated CRP (108.4 mg/L), minimal leucocyturia and hematuria (25/mm3 and 10/mm3 respectively) were noted. A chest X-ray was performed showing left pachypleuritis. Oral Ciproflaxacin was prescribed and the patient was discharged. Symptoms persisted despite five doses of antibiotic prompting return to the ED after two days. She was admitted on suspicion of UTI.

Of note: 4 months prior she describes an episode of left inferior lobar pneumonia with pleural effusion that required drainage.

Clinical exam was relatively normal: no hemodynamic instability, dysuria or lumbar pain. New laboratory tests were ordered and revealed leukocytosis with neutrophilia (15.92 x 103/mm3 and 12.68 x 103/mm3 respectively), rising CRP (155.7 mg/L), leucocyturia (50/mm3 and 75/mm3 respectively), proteinuria (75 mg/dL) and hematuria (25/mm3). Urine culture was negative. Symptoms persisted despite five doses of antibiotic prompting return to the ED after two days. She was admitted on suspicion of UTI.

To assess clinical characteristics and indication for imaging of the patients who have had indirect MAG3 cystography (IRC) performed in CHI at Crumlin and Temple Street, and whether it changed patient management.

In this retrospective audit we identified all children who had IRC performed in Temple Street and Crumlin in the last 4 years by searching the radiology systems. Data collected included age of patient at time of scan, indication for scan, results of scan, whether a conventional micturating cystourethrogram (MCUG) had previously/subsequently been performed, and what changes were made to management.

N=36 patients were identified (3 male). Mean age at scan was 9 years 5 months. The most common indication was recurrent UTI (33/36), with additional renal scarring in 14/33 of these. 12 patients had had a previous MCUG, and 11 of these demonstrated reflux. 5 patients had previously had a STING procedure and one had ongoing reflux on IRC and was referred for surgery. 8 patients had reflux demonstrated on IRC. 4 of these went on to have surgical intervention based on their IRC – 1 had a ureteric reimplantation, and 3 had STING procedures. 3 patients had a standard MCUG following a negative IRC due to high suspicion of reflux. One of these displayed grade 1 reflux, one displayed grade 2 bilateral reflux, and one was normal. The patient with grade 2 bilateral reflux also had renal scarring and went on to have a STING procedure performed.

IRC is a safe, non-invasive alternative to MCUG in older children with suspicion of reflux. Demonstration of reflux on IRC can be helpful in decision making regarding further intervention for patients with recurrent UTIs, particularly with renal scarring. For the majority of patients a negative result can reassuring, without the patient having an invasive procedure.
367 CLINICAL AND MOLECULAR FACTORS PREDICTING STEROID RESISTANCE IN PEDIATRIC NEPHROTIC SYNDROME

Ievgeniia Burlaka*, Mitiaurava-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: -0.357; 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 (mmol/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 (mmol/mol) 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 (mg/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...