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 cystomanometry, and 4,215 had uroflow and ultrasound.

Videourodynamics 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

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A RARE FORM OF TUBERCULOSIS PRESENTATION

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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 ($17.17 \times 10^3/\text{mm}^3$ and 14.31×10^3 respectively), elevated CRP (108.4 mg/L), minimal leukocyturia and hematuria ($25/\text{mm}^3$ and $10/\text{mm}^3$ respectively) were noted. A chest X-ray was performed showing left pachypleuritis. Oral Ciprofloxacin 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 ($15.92 \times 10^3/\text{mm}^3$ and $12.68 \times 10^3/\text{mm}^3$ respectively), rising CRP (155.7 mg/L), leukocyturia ($50/\text{mm}^3$), proteinuria (75 mg/dL) and hematuria ($25/\text{mm}^3$). Urine culture was negative. Renal ultrasound revealed slight right pyelectasia. Pyelonephritis with unknown agent was diagnosed and IV Ceftriaxone 70 mg/kg once daily was started.

During the next three days the patient had frequent fever episodes and continuously rising CRP (193 mg/L) and leukocytes ($19 \times 10^3/\text{mm}^3$). Antibiotic therapy is changed to Meropenem 60 mg/kg/day t.i.d. Fever continues and chest tightness is described. Further tests are ordered: blood cultures (negative), chest X-ray (left basal opacity interpreted as possible pleural effusion is noted), ESR (100 mm/h), fibrinogen (625 mg/dL), C3, C4, circulating immune complexes, rheumatoid factor, p-ANCA, c-ANCA, antinuclear antibodies, anti-dsDNA antibodies, QuantiFERON TB gold, HIV serology (negative) and a metabolic panel. Creatinine and urea are elevated (4.22

mg/dL and 87 mg/dL respectively). Fractional excretion of sodium is 1.6% suggesting tubular damage. No sign of nephritic syndrome is noted and diuresis is normal. With supportive measures creatinine and urea values decrease (2.72 mg/dL and 57 mg/dL respectively). Chest echography reveals a 21mm-thick pleural effusion. QuantiFERON TB gold test is positive prompting transfer to a specialized tuberculosis clinic. On patient follow-up kidney function returned to normal after specific TB treatment.

Renal TB is noted in literature, but the age and immune status of the patient, the clinical presentation, confounding laboratory findings and associated acute kidney injury with interstitial nephritis are of particular interest. Rare forms of renal TB (such as membranoproliferative glomerulonephritis) are noted, but usually in old and/or immunocompromised patients.

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AUDIT OF CURRENT UTILISATION OF PAEDIATRIC INDIRECT MAG3 RADIONUCLIDE CYSTOGRAPHY IN CHILDREN'S HEALTH IRELAND

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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 scanning 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 be reassuring, without the patient having an invasive procedure.

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

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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

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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/mol 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

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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