Purpose To evaluate the diagnostic performance and safety of intravesical administration of a-second-generation ultrasound contrast-agent (UCA) for the diagnosis of vesicoureteric reflux (VUR) in children.
Methods and materials 1350 children (587 boys/763 girls, mean-age 2.6y, range 15d-17y) with 2720 pelvi-ureter-units, underwent contrast-enhanced voiding urosonography (ceVUS) to rule out VUR and urethral pathology. A second-generation UCA (SonoVue®, Bracco, Milan) was administered intravesically through 5–8F feeding-tube at a dose of 0.5 ml/bladder filling. Possible adverse-events were monitored during the examination and followed-up for 7 days after the ceVUS by phone-calls. Urine analysis and culture were performed 3–5 d before ceVUS in all children and 24–48 h in any patient reported with adverse-events.
Results VUR was detected in 450/1350(33%) patients (162 boys/288 girls). This was in 653 pelvi-ureter-units (reflux-grade distribution: grade I = 1, grade II = 276, grade III = 266, grade IV = 100, grade V = 10). The urethra was normal in all children. Mean duration of examination was 14 ± 7 min, including urethral imaging. Minor adverse-events were reported in 45 (3.3%) children. These included dysuria (n = 39), abdominal pain (n = 2), increased frequency of micturition (n = 1), vomiting (n = 1), perineal irritation (n = 1), and urinary-tract-infection after ceVUS (n = 1). The onset of adverse-events were subacute in 92% and delayed in 8% and were self-limited non-requiring hospitalisation.
Conclusions There were no serious adverse-events with intravesical use of SonoVue®. Only a few minor adverse-events were reported during ceVUS most likely due to catheterization process. Thus ceVUS with intravesical administration of a second generation UCA (SonoVue®) for VUR and urethral pathology detection is a safe and reliable diagnostic procedure in children.

PS-238 STUDY OF BONE BIOCHEMICAL MARKERS AND THE CYTOKINE SRANKL/OPG SYSTEM IN CHILDREN WITH IDIOPATHIC HYPERCALCIURIA

[1]M Pavlou, [1]E Siomou, [2]A Challa, [1]D Kourou, [1]A Siamopoulou. *[1]Paediatrics, University Hospital of Ioannina, Ioannina, Greece; [2]Paediatrics Research Laboratory, University Hospital of Ioannina, Ioannina, Greece*

10.1136/archdischild-2014-307384.537

Background Idiopathic Hypercalciuria (IH) has been associated with decreased bone density up to 30% of the children.
Aims To determine the concentrations of cytokines osteoprotegerin (OPG) and sRANKL and other biochemical indices of bone metabolism in children with IH.
Methods In 31 children of median age 6.3 years (range 2.2–16.4) with IH OPG, sRANKL, 25(OH)D, $1,25(OH)_2D$, PTH, Ca, Pi, osteocalcin, ALP and CTx-Crosslaps were determined in serum and Ca/Cr, oxalate/Cr and citrate/Cr in urine. Times of study were at diagnosis and after 3 months of salt free and adequate Ca diet. Height and BMI z-score were assessed. Clinically healthy children (n = 35) matched for age/sex and season were used as controls (median 7.8 years, range 1.8–16.3).
Results Although urinary Ca excretion (24 hCa and UCa/UCr) decreased at 3 mo ($p < 0.05$ and $p < 0.01$) on average it had not reached control values ($p < 0.0001$, $p = 0.0004$). No significant differences were found for urine excretion of citrate and oxalate or for serum Ca, Pi, 25OHD, $1,25(OH)_2D$, PTH, osteocalcin, ALP, OPG, sRANKL and sRANKL/OPG ratio in patients before and after diet or compared to controls. Only serum concentrations of CTx-Crosslaps were significantly higher in both patient samples ($p < 0.02$, $p < 0.05$) than controls. The BMI z-score was lower in patients than controls ($p = 0.016$), but height did not differ.
Conclusion Although serum OPG/sRANKL and osteocalcin were not different in children with IH, the higher serum CTx-Crosslaps levels (bone resorption index) may suggest bone turnover uncoupling with an autocrine role of the above cytokines.

PS-239 EARLY ACUTE RENAL INJURY VERSUS LATE ACUTE RENAL INJURY. ARE THERE ANY PROGNOSTIC DIFFERENCES BETWEEN THEM?

A Jiménez, A Haro, C Torres, P Salgado, MJ Santiago, AJ Alcaraz, SN Fernandez. *PICU, Hospital General Universitario Gregorio Marañón, Madrid, Spain*

10.1136/archdischild-2014-307384.538

Objectives To evaluate the clinical differences betweenpatients developing early acute kidney injury (EAKI) and late acute kidneyinjury (LAKI) during their stay in a PICU.
Methods Retrospective study including patients admitted to the PICU over the last 4 years. Children were excluded if they had a length of stay of less than 2 days or if they had end stage renal disease. AKI was defined according to the KDIGO criteria. The episodes of AKI that began within the first 72 h of admission were considered early AKI (EAKI), and those that appeared later were considered LAKI.
Results 1082 patients fulfilled the inclusion criteria. 415 patients (38.3%) developed AKI: EAKI 354 patients (173 had stage I AKI, 77 stage II and 104 stage III); 61 patients LAKI (33 stage I, 15 stage II and13 stage III). The severity and duration of the AKI, the need for dialysis and the incidence of pre renal AKI were not different between EAKI and LAKI groups. Patients with LAKI had more time of mechanical ventilation (156 h vs 72 h, p0.006) and a longer PICU stay (13 vs 7 days, $p < 0.001$). There were no differences in age or mortality between groups. LAKI was found to be more frequent in post-operative cardiac patients (41%) ($p < 0.001$).
Conclusions LAKI is associated with more time of MV, longer PICU stay and with the cause of admission to the PICU. However LAKI is not associated with greater severity or mortality than EAKI.

PS-240 DEVELOPING A TOXIC PAEDIATRIC ANIMAL MODEL OF NON-OLIGURIC ACUTE RENAL INJURY WITH CISPLATIN

MJ Santiago, J López-Herce, J López, J Urbano, R González, MJ Solana, SN Fernandez, B Toledo. *PICU, Hospital General Universitario Gregorio Marañón, Madrid, Spain*

10.1136/archdischild-2014-307384.539

Introduction Developing a non-oliguric paediatric animal model of acuterenal injury (AKI) could be useful to study the evolution of diuresis after treatments. Cisplatin causes a dose-dependant poliuric renal failure in humans. A dose of 5 mg/kg has been used in rats to produced AKI but there are no studies in pigs.