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ROLE OF DMSA RENAL SCINTIGRAPHY IN CHILDREN WITH VESICoureTERAL REFLUX

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Objective: Urinary tract infection (UTI) is a common condition in children with vesicoureteral reflux (VUR), and may lead to renal damage. The aim of this study was to determine the incidence and pattern of abnormal scintigraphy findings in children with UTI and VUR.

Patients and methods: Data of 118 children who underwent micturating cystourethrography (MCU) and late Tc-99m dimercaptosuccinic acid (DMSA) scan were evaluated. Findings were categorized under the image appearance and relative kidney uptake (RKU) and related to the grade of VUR, sex and child's age.

Results: MCU revealed VUR (78 unilateral and 40 bilateral) of grades I, II, III, IV and V in 2, 47, 35, 19 and 15 patients respectively. There were 52 children with normal and 66 with abnormal DMSA finding. Scarring rate was significantly associated with high grade VUR ($p=0.0023$) and male gender ($p=0.0412$). Bilateral scarring was shown exclusively in children with bilateral VUR. No significant difference was found between renal scarring and child's age in the same gender group. Poor kidney function was shown in 5 patients.

Conclusion: Renal scarring highly correlated with grade of VUR. A strategy to perform MCU only on patients with abnormal DMSA finding is proposed.

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ACUTE POST STREPTOCOCCAL GLOMERULONEPHRITIS IN CHILDREN

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Aim of the study: To present a number of children with set diagnosis of APSGN in the Pristina Children's Clinic, incidence, clinical characteristics of the disease and adequate treatment. Their follow up aimed to determine the further course of the disease and the possibility for progressing into a chronic form.

Materials and methods: This was an analysis of the children treated in the Prishtina Children's Clinic during 2007-2009. The diagnosis of APSGN was set in 132 children based on anamnestic data for existing a prior streptococcal infection, clinical picture, as well as laboratory analyses.

Results: The dominant age group was 7-11 year olds, while male patients were more frequent. Anticipatory throat infection appeared in 82% of all cases. In all cases, the clinical symptoms were hematuria and/or proteinuria. Hypertension was present in 73% cases, while edema was confirmed in 79 % of hospitalized patients. Positive ASO was confirmed in 75,8%. All cases were treated successfully and regularly followed up, only 3,5% cases were found resistant to therapy and progressed to chronic form. In all chronic cases, the diagnosis was confirmed after a renal biopsy.

Conclusion: In a 96,5% of patient a complete recovery was obtained with further outpatient follow up, and only 3,5 % entered into the form of chronic glomerulonephritis.

Keywords: Glomerulonephritis, diagnosis, treatment.

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SYSTEMIC ARTERIAL HYPERTENSION IN CHILDREN: THE IMPORTANCE OF THE INVESTIGATION

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Background and aims: High blood pressure (HBP) in children is defined as a blood pressure (BP) >95th percentile (age, height and sex-adjusted). Renovascular disease is a major cause of secondary hypertension in children.

Methods: We describe a clinical report.

Results: AC, 5 years-old caucasian female, sent to our hospital because of an asymptomatic HBP detected in a routine consultation. She had no relevant personal or familial history. Her physical exam was normal and did not reveal any edema, cardiac murmurs or abdominal masses or murmurs. Her body mass index was 15.6kg/m² and the BP

was >99th percentile in the four limbs. The retina was normal. She performed the following exams, all normal: blood cell count, blood urea, creatinin, ions, lipid profile, thyroid function, rennin, aldosterone, urine sediment and urinary catecholamins, metanefrins, homovanillic and vanilmandelic acid. The cardiac and abdominal ultrasounds were also normal. The renal Doppler ultrasound was "not suggestive of renovascular disease". With these results, she performed a renal cintigraphy with DMSA that showed a "hipofixation of the contrast in the superior half of the left upper renal pole". After it, she performed a renal arteriography, which confirmed the left renal artery stenosis and an angioplasty was made, with success.

Conclusions: This diagnosis was delayed by the normality of some exams, specially the renal Doppler ultrasound and the plasmatic renin activity. However, it is important to underline that if the suspicion index is high, the persistence on the evaluation should involve the second line exams, like in this case.

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GROWTH MONITORING IN CHRONIC KIDNEY DISEASE

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Background and aims: Growth failure is a common feature in Chronic Kidney Disease (CKD) and frequently leads to decreased adult height. Malnutrition, biochemical abnormalities and reduced sensitivity to growth hormone (GH) contribute to growth failure. We compared our practice to the standards set by Renal Association for growth monitoring and National guidelines on GH use.

Methods: Growth monitoring in children with GFR < 20ml/min/1.73m² was reviewed over a period of 2 years from 2008-2009. 16 cases were identified. Case notes and growth charts were reviewed.

Results: 4/16 (25%) children did not have height and weight plotted during every clinic visit as recommended. All children < 2 years old had their head circumference plotted.

82% children had 3 monthly dietary review as recommended.

10/16(62.5%) children had Parathyroid hormone (PTH) > 15pmol/L (3 x upper limit) and 4/16(25%) had bicarbonate < 20mmol/L.

50% children were referred to growth clinic appropriately.

7/16(43%) had height < 3rd centile and 5/16(31%) had height velocity < 3rd centile. 4/16 children (25%) had both height and height velocity < 3rd centile. Of these 2 children were prescribed GH, one child was only recently referred to growth clinic and one child is being monitored as PTH level is high.

Conclusion: Growth monitoring could be improved to meet Renal Association recommendations. This analysis shows that biochemical control in advanced CKD is difficult to achieve despite dietary and medical manipulations. Growth Hormone therapy was prescribed appropriately and can only be considered after nutrition optimised and metabolic abnormalities corrected.

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MEASUREMENT OF AORTIC PULSE WAVE VELOCITY IN CHILDREN AND ADOLESCENTS - VALIDATION OF THE VICORDER DEVICE IN HEALTHY INDIVIDUALS

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Background and aims: Aortic pulse wave velocity (aPWV) estimates aortic stiffness and predicts cardiovascular mortality risk in adults. Since children with kidney disease are at high risk for cardiovascular mortality later in life, it would be important to detect advanced arterial stiffening early. There are different ways to assess aPWV. This study compares aPWV values of young individuals measured by applanation tonometry (SphygmoCor) and with a new oscillometric device (Vicorder).

Methods: aPWV in 131 healthy children (age 6-18 years) was measured 1. by sequential tonometry and 2. by oscillometry in a synchronic manner. SphygmoCor aPWV was calculated with distance 1 (dist.1) [(Suprasternal notch(SSN) to Umbilicus(Umb)) + (Umb to A.fem.) - (SSN to A.car.)]. For Vicorder 3 additional distances were measured and used: dist.2 [(SSN to Umb) + (Umb