P-179 WHICH EGFR EQUATION SHOULD BE USED IN CHILDREN TO DETERMINATE CKD?

Secil Conkar , Sevgi Mir
Ege University Faculty Of Medicine, Department Of Pediatric Nephrology

Introduction: Glomerular Filtration Rate (GFR) is the best indicator of kidney function. The Kidney Disease Outcomes Quality Initiative (KDOQI) 2000 guidelines of the National Kidney Foundation suggest the use of the Schwartz formula or the serum Scr-based eGFR equations for children in the assessment of chronic kidney disease (CKD). We assessed correlations between eGFR equations based on Scr, CysC, CysC-Scr, and creatinine clearance ($CrCl_{24}$).
Material and methods: In our study, we calculated eGFR values according to five measurement methods: 1) the original Schwartz formula, 2) creatinine clearance 3) CKiD-eGFR-cysC 4) CKiD-eGFR-creat-cysC, and 5) Bedside Schwartz. Using the creatinine clearance as a gold standard, we calculated the specificity and sensitivity of all eGFR equations in determining GFR <90ml/min/1.73m^2. CysC was measured by the Particle Enhanced Nephelometric Immunoassay (PENIA) method.
Results: A total of 238 children were enrolled from the Ege University pediatric nephrology clinic. Of the cases, 117 (49.2%) were males and 121 (50.8%) were females. The mean age was 9.91 ± 5.7 years. When the GFR cut-off was taken as 90 ml/min/1.73m^2 using creatinine clearance, the area under the curve analyzed by Receiver Operating Curve (ROC)c for CKiD-eGFR-cysC, Counter-Barratt, CKiD-eGFR-creat-cysC, Bedside Schwartz, and Original Schwartz was found 0.89, 0.88, 0.89, 0.88, and 0.86 respectively. The CKiD-eGFR-cysC and CKiD-eGFR-creat-cysC were identified as the most sensitive formula for determining GFR<90 ml/min/1.73m^2
Conclusions: Bedside Schwartz is ideally suited for the daily practice because it uses the same constant "*k*" for all age groups. Also, the Original Schwartz can be used to determine normal renal function. In this study, we found that CKiD-eGFR-Scr-CysC is the most ideal and reliable eGFR equation to determinate GFR <90 min / 1.73m^2.

P-180 DOES ONE SIZE OF DESMOPRESSIN ORAL LYOPHILISATE FORMULATION REALLY FITS THEM ALL? EXPLORING THE NEED TO PERFORM PHARMACOKINETIC- AND PHARMACODYNAMICS TRIALS IN CHILDREN.

Dossche Lien [2], Michelet Robin [1], Raes Ann [2], De Bruyne Pauline [2], Vande Walle Johan [2]
[1] *Laboratory Of Medical Biochemistry And Clinical Analysis, Department Of Bioanalysis, Faculty Of Pharmaceutical Sciences, Ghent University, Ghent, Belgium;* [2] *Department Of Pediatric Nephrology, Ghent University Hospital, Ghent, Belgium*

Introduction: Desmopressin (dDAVP) is indicated for central diabetes insipidus and primary enuresis. Patients suffering from nocturnal polyuria, all start with a dose of 120 micrograms. This lack size dependent labelling remains to be elucidated. It might be attributed to insufficient pediatric pharmacokinetics/dynamics (PK/PD) data in the whole group.
Material and methods: An open label, non-randomized, PK/PD study. 22 children were recruited (age 6 months – 8 years, mean age 4.8 years). All needed a urinary concentration test or had nocturnal polyuria with treatment failure on tablet. Maximal diluting capacity (urinary osmolality < 200 mosm/l) was achieved after a 15 ml/kg water load. dDAVP was provided sublingual as one-time age-adapted dose (60 (6 months - 2 years), 120 (2- 4 years), or 240 micrograms (4- 8 years)). Subsequently, all urinary voids were compensated. Plasma and urinary concentration of dDAVP were measured every 15 minutes during the first hour, and at 1h, 2h, 3h, 5h, 6h and 7h post-dosing. Non-compartmental analysis was performed, with assessment of covariates (age, sex, body weight) on PK and PD model parameters.
Results: PK-parameters in this younger age-group were comparable with those reported. No significant correlation (Spearman's rank correlation coefficient) was shown between plasma concentrations of dDAVP and dose corrected by age, sex and body weight. When dose was corrected by distribution volume, a significant correlation ($p < 0,01$) for weight, length and age was found, not for body-mass index. It suggests that distribution volume is lower or bioavailability is higher. On PD-level, a prolonged duration (> 7h) of antidiuretic effect was found.
Conclusions: To prescribe safely dDAVP in young children, performing studies to correlate the PK-parameters with the effect on the PD-level are essential. A longer duration of antidiuretic effect is clinically important, since ability to regain diluting capacity the next morning might be lost, increasing the risk of hyponatremia.

P-181 EDUCATION STATUS OF PEDIATRIC DIALYSIS PATIENTS IN TURKEY

Ali Delibaş [1], Mesiha Ekim [2], Zeynep Yürük Yıldırım [3], Ruhan Düşünsel [4], Aslıhan Kara [5], Aytül Noyan [6], Aysun Karabay Bayazıt [7], Seçil Conkar [8], Burcu Özer Yazıcıoğlu [9], Erkin Serdaroğlu [10], Gülşah Kaya Aksoy [11], Nurver Akıncı [12], Dilek Yılmaz [13], Kenan Bek [14], Pelin Ertan [15], Metin Kaya Gürgöze [5], Caner Kabasakal [8], Serra Sürmeli Döven [1], Özde Nisa Türkkan [3], Neslihan Günay [4], Gönül Parmaksız [6], Engin Melek [7], Semra Erdoğan [16], Sevcan Azime Bakkaloğlu Ezgü [9], Lale Sever [17]
[1] *Mersin University Faculty Of Medicine, Department Of Pediatric Nephrology, Mersin, Turkey;* [2] *Ankara University Faculty Of Medicine, Department Of Pediatric Nephrology, Ankara, Turkey;* [3] *Istanbul University, Istanbul Faculty Of Medicine, Pediatric Nephrology Department, İstanbul, Turkey;* [4] *Erciyes University Faculty Of Medicine, Department Of Pediatric Nephrology, Kayseri, Turkey;* [5] *Fırat University Faculty Of Medicine, Department Of Pediatric Nephrology, Elazığ, Turkey;* [6] *Başkent University Faculty Of Medicine, Department Of Pediatric Nephrology, Adana, Turkey;* [7] *Çukurova University Faculty Of Medicine, Department Of Pediatric Nephrology, Adana, Turkey;* [8] *Ege University Faculty Of Medicine, Department Of Pediatric Nephrology,İzmir, Turkey;* [9] *Gazi University Faculty Of Medicine, Department Of Pediatric Nephrology, Ankara, Turkey;* [10] *Health Science University Dr. Behçet Uz Children Hospital, Department Of Pediatric Nephrology, İzmir, Turkey,;* [11] *Akdeniz University Faculty Of Medicine, Department Of Pediatric Nephrology, Antalya, Turkey;* [12] *Şişli Hamidiye Etfal Education Hospital, Department Of Pediatric Nephrology, İstanbul, Turkey;* [13] *Adnan Menderes University Faculty Of Medicine, Department Of Pediatric Nephrology, Aydın, Turkey;* [14] *Kocaeli University Faculty Of Medicine, Department Of Pediatric Nephrology, Kocaeli, Turkey;* [15] *Celal Bayar University Faculty Of Medicine, Department Of Pediatric Nephrology, Manisa, Turkey;* [16] *Mersin University Faculty Of Medicine, Department Of Biostatistics, Mersin, Turkey;* [17] *Cerrahpasa School Of Medicine, Istanbul University, Department Of Pediatric Nephrology, İstanbul, Turkey*

Introduction: Dialysis patients are at risk of school absence. This study aimed to evaluate the education status of pediatric dialysis patients in Turkey.
Material and methods: A questionnaire including parameters of age, gender, type and duration of dialysis, school type, causes of school absenteeism and school success was applied to pediatric dialysis patients.
Results: A total of 180 patients (92 female) from 16 centers were included in this study. Dialysis type was CAPD in 32 (17.8%), APD in 50 (27.8%), HD in 96 (53.3%) and home-HD in 2 patients (1.1%). Regarding education status of patients, 6 (3.3%) were in preschool, 31

(17.2%) in primary school, 58 (32.2%) in secondary school, 48 (26.7%) in high school and 2 (1.1%) in university. Thirty-one patients (12.75%) never attended a school. Sixty two patients (21.7%) left the school. The number of patients being educated at home was 38 (21.1%). The causes of school absenteeism was different between PD and HD patients (Table1).

Table 1 Factors associated with school absence in PD and HD patients

Causes of school absenteeism	PD n:35 (%)	HD n:53 (%)	P
Mental disability	8 (53.3%)	7 (46.7%)	0.026
Physical disability	6 (50.0%)	6 (50.0%)	
Frequent hospitalisation	8 (22.9%)	27 (77.1%)	
Concerns of getting sick at school	9 (69.2%)	4 (30.8%)	
Others	4 (39.8%)	9 (60.2%)	
Number of absent days/year	42.3 ± 49.2	120.9 ± 104.9	<0.001
Number of hospitalizations/year	2.7 ± 2.6	3.7 ± 2.8	0.048
Hospital stay time/year (days)	22.2 ± 24.3	36.0 ± 34.1	0.015

Conclusions:
Aproximately one fifth of dialysis patients were not going to school. Long and frequent hospitalizations in HD patients and fear from getting sick (parental concern) in PD patients were leading causes of non-attendance. Education of dialysis patients deserves more attention. Every effort should be made for maintaining school attendance of dialysis patients to the appropriate school grade with peers.

P-182 THE FIRST CASE REPORTOF PERITONEAL DIALYSISRELATED PERITONITIS IN A CHILD DUE TO MICROBACTERIUM ARBORESCENS

Ilknur Girisgen [1], Selcuk Yuksel [1], Ilknur Kaleli [2]
[1] *Pamukkale University Faculty Of Medicine Department Of Pediatric Nephrology;* [2] *Pamukkale University Faculty Of Medicine Department Of Microbiology*

Introduction: Peritonitis is a serious problem in children who receive peritoneal dialysis (PD).
Material and methods: A 16-year-old girl who had end-stage renal failure and who had been treated with continuous ambulatory PD was admitted to our hospital. She has suffered from three peritonitis attacks within 30 days. *Microbacterium arborescens* was isolated from her PD fluid culture during the last two peritonitis attacks. After the patient received intraperitoneal cefepime treatment, the PD catheter was removed.
Results: Human infection due to the Microbacterium genus is very rare. Interestingly, *Microbacterium arborescens*, a facultative alkaliphile isolated from coastal sand dunes, is able produce large amounts of exopolysaccharide that was able to aggregate sand. Bacterial exopolysaccharide synthesis is a prevalent and indispensible activity in many biological processes, including surface adhesion and biofilm formation. We suggest that, in this case, *Microbacterium arborescens* led to the formation of a biofilm layer via the formation of exopolysaccharides, thus causing the recurrent peritonitis attacks.
Conclusions: To our knowledge, *Microbacterium arborescens*-caused peritonitis has not previously been reported in a child undergoing PD. Management of peritoneal dialysis-related peritonitis due to microorganisms which have ability to produce exopolysaccharide seems to be difficult without catheter withdrawal.

P-183 THE EFFECT OF CLEAN INTERMITTENT CATHETERIZATION ON INTRAPERITONEAL PRESSURE IN PERITONEAL DIALYSIS PATIENTS WITH NEUROPATHIC BLADDER

Erkin Serdaroglu, Aysen Toktay, Sukran Keskin Gozmen
University Of Health Sciences Dr. Behcet Uz Children's Hospital Department Of Pediatric Nephrology

Introduction: Neuropathic bladder (NB) is frequent cause of chronic renal disease in children. Clean intermittent catheterization (CIC) is standard treatment of NB. Peritoneal dialysis (PD) is the one of treatment choice of renal replacement treatments. Intraperitoneal pressure (IPP) is related with fluid and solute transport and mechanical complications in PD. In this study, we aimed to determine relationship between IPP and CIC in children on PD.
Material and methods: Six cases with NB secondary to myelomeningocele whose are on PD and CIC treatments were evaluated. IPP were measured using the Durand's method in upright, sitting and supine positions before CIC. Intravesical pressure and urine volume were measured using by urinary catheter and IPP measurements were repeated with empty bladder.
Results: A total of six cases (5 male) were included in the study. The IPP was found 8.2±3.1 (median 8), 18.8±4.2 (median 18) and 22.9±4.3 (median 22.5) cmH_2O while supine, upright and sitting positions respectively. Mean urine volume and intravesical pressure was 195±143 ml (median 200) and 10.6±6.3 (median 8.5) mmH_2O. Mean IPP with empty bladder after CIC was 6.2±2.3 (median 6) cmH_2O. The mean IPP value after CIC decreased by 1.9±1.6 cmH_2O and the difference was found to be statistically significant (p=0.042). In the supine position, IPP before CIC was correlated with IPP after CIC (r=0.92) and urine volume discharged with CIC (r=0.62). Intravesical pressure measurements were negatively correlated with IPP before (r=-0.70) and after CIC (r=-0.70). Urine volumes were correlated with IPP before CIC on upright position (r=0.921), sitting position (r=0.667) and supine position (r=0.616).
Conclusions: IPP measurements are important when PD prescribing and preventing mechanical complications. Failure to discharge the bladder periodically and completely may results with increase of IPP in patients with NB. Emptying bladder regularly and fully with CIC may help us to the control high IPP in patients with NB.

P-184 ANTIMICROBIAL ACTIVITY OF PERITONEAL FLUID IN CHILDREN ON PERITONEAL DIALYSIS

Valya Georgieva [1], Witchuda Kamolvit [2], Petra Luthje [2], Rukshana Shroff [3], Annelie Brauner [2], Milan Chromek [1]
[1] *Division Of Pediatrics, Department Of Clinical Science, Intervention And Technology, Karolinska Institutet And Karolinska University Hospital, Stockholm, Sweden;* [2] *Division Of Clinical Microbiology, Department Of Microbiology, Tumor And Cell Biology, Karolinska Institutet And Karolinska University Hospital, Stockholm, Sweden;* [3] *Great Ormond Street Hospital For Children Nhs Foundation Trust, London, Uk*

Introduction: Peritonitis is the commonest risk associated with peritoneal dialysis (PD). Interestingly, some patients appear to be resistant to peritonitis while others suffer from recurrent infections that often lead to catheter removal and loss of peritoneal membrane function. The aim of our study is to characterize endogenous antimicrobial components in the PD fluid to better understand innate immunity of the peritoneal cavity.
Material and methods: We collected peritoneal fluid from 5 children on PD with no infections in the preceding 6 weeks and with no antibiotic treatment. Two samples were collected from each patient: 1. fluid that had been in the peritoneal cavity for 12 hours, and 2. fluid that had been in the peritoneal cavity for 1 hour. The samples were centrifuged, supernatants were desalted and concentrated 500 times. An antimicrobial assay with the 2 commonest organisms causing peritonitis, *Staphylococcus*