RETROSPECTIVE STUDY OF THE USAGE OF CENTRAL VENOUS CATHETERS IN TWO-YEAR PERIOD AT THE DEPARTMENT OF PEDIATRICS IN UNIVERSITY HOSPITAL CENTRE ZAGREB, CROATIA

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Aim To analyze methods of central venous catheter (CVC) usage, to establish the state of current practice and perhaps change the approach depending on the analysis of our results.

Methods A retrospective study which included a cohort of patients treated at the Department of Pediatrics UHC Zagreb, to whom in the period from January 1st 2018 till December 31st 2019 the CVC was extracted. A sample was formed based on results of microbiological analysis of the CVC tip. The main source of data was the hospital’s information system, which was analyzed using descriptive statistics methods. According to the variety of the underlying disease, patients have been divided into 4 groups: congenital anomalies, cardio-vascular, hemat – oncological diseases and others.

Results 11,648 children were hospitalized in our Department during a two-year period, when CVC was extracted in 505 (4.3%) of all hospitalized children. One CVC had 385, two 81, three or more 39 of 505 children. A total of 693 catheters were extracted: 449 Broviac, 195 PICC, 38 umbilical, 7 Port-a-Cath and 2 Hickman catheters. The distribution of CVC by groups was: heart diseases (287), congenital anomalies (224), hemat – oncological (78), other diseases (104). Based on the available data, we singled out the causes of extraction in 91 respondents (i.e. 122 removed catheters). We list them in order: end of treatment (75/122), dysfunction (9/122), displacement (6/122), mechanical damage (5/122) and catheter sepsis (2/122). A total of 667 catheters were microbiologically analyzed, 172 of them were positive (25.78%). The most common agents were: Coagulase – negative Staphylococcus (51), Staphylococcus epidermidis (44) and Candida yeasts (18). There was no difference in the incidence of positive catheters in groups of respondents with different numbers of catheters (I 24.5%, II 27.5%, III 27.1%). Patients with congenital anomalies had a slightly higher incidence of microbiologically positive catheters (32%), while in cardiovascular, hemat – oncological and other diseases, incidence was almost equal (22%, 25%, 26%).

Conclusion CVC is rarely required in the treatment of our patients, but unavoidable in cardio-surgical, hemat – oncological patients and in many others with complex congenital anomalies. A significant number of catheters had been colonized over the time, but even in the case of an invasive disease, antimicrobial treatment was continued using the same catheter. Its extraction was needed extremely rare. Regardless to the nature of diseases in which the CVC was used, our results suggest the requisite to revise their usage.
mostly grade II (41; 60.3%) and grade III (20; 29.4%). Of the total number of children with a prenatal diagnosis of hydronephrosis, 28.6% had VUR.

In the group of children with first febrile UTI, VUR was discovered in 30 (36.6%). With regard to VUR, no significant difference was found between normal pathologic ultrasound findings (38.1% vs. 41.7%; p = 0.739). No difference was found regarding severity of UTI: urine Leukocyte < 20 vs. urine Leukocyte > 20 (40.3% : 43.7%; p = 0.787), CRP < 50 vs. CRP > 50 (37.5% : 35.5%; p = 0.46) as well as between age of children <1 year vs. > 1 year (34.5% : 41.3%; p = 0.141. Significant differences were found between girls and boys (M vs F = 19.0% vs.34.6%; p = 0.0466).

Analysis of data points to a higher likelihood of background VUR in recurrent UTI; whereas gender, age, urinary tract ultrasound examination, severity, and other causative agents of UTI have no predictive value for VUR detection. ceVUS is one of the best choices in modern nephrology for the detection of VUR with high sensitivity and negligible side effects.

Follow-up ultrasound showed progressive involution of the MCDK left and multiple very small cysts that generate abnormal parenchymal echogenicity (eg, salt-and-pepper sign) on the right kidney. Functional MRI urography showed non-functional MCDK left and functional right kidney with lesser number of small cysts. At the age of four arterial hypertension (130/70 mmHg) was diagnosed and ACE inhibitor was introduced. There were no signs of liver disease. Abdominal ultrasound revealed no cysts of liver, spleen or pancreas. Gynecological ultrasound and ophthalmological examination were also normal. Due to parental disapproval, genetic testing wasn’t performed.

Conclusion We conclude that, although rare, different types of CyKD can be associated and we should consider it when setting the diagnosis. Due to select differential diagnosis and overlapping clinical presentations of CyKD genetic testing should be performed whenever possible.

Background Catheter associated urinary tract infection (CAUTI) is a common device-acquired infection and represents a potentially harmful reservoir of resistant uropathogens. Guidelines recommend limitation of catheter use, aseptic catheter insertion, sterile equipment, strict hand hygiene, use of smallest catheter possible and maintenance of a closed drainage system.

Klebsiella Pneumoniae is a non-mobile aerobic rod causing a large spectrum of hospital-acquired infections, especially pneumonia or urinary tract infections (UTI), developing intrinsic resistance genes. Treating multi drug resistant (MDR) gram negative pathogens becomes a challenge for the caregiver.

Vesicoureteral reflux (VUR) consists of backflow of urine from the bladder into the ureters. It can be primary or secondary due to abnormal lower urinary tract function and elevated intravesical pressure. Post void residual (PVR) is a hallmark of detrusor underactivity (DUA) in children.

Case Presentation Summary We present the case a three years old boy, hospitalized for viral encephalitis, undergoing artificial respiratory support and urine catheterization for 6 weeks. Neurological status was hypotonic cerebral palsy and secondary urinary incontinence in a previously toilet trained child.

First febrile UTI developed two days after removing urine catheter. High resistant Klebsiella pn. (ESBL+, AAC(3)-II) was treated with a ten-day course of Cephtiraxone and Amikacin. Clinical response to treatment was good with sterile urine culture after 96 hours. After treatment, the child had asymptomatic bacteriuria with MDR Klebsiella pn. in spite of rigorous local hygiene, proper hydration and oral Fosfomycin. Second febrile UTI was accompanied by febrile seizures, and urine culture was positive with MDR Klebsiella (+ESBL or +H AmpC, Carbapenem impermeability). Treatment with high dose Meropenem (40mg/kg/dose) for twelve days was successful. Third febrile UTI occurred five days after finishing treatment with same MDR Klebsiella strain. Once again, fourteen-day high dose Meropenem course was successful. Fourth