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Congenital anomalies of kidney and urinary tract in late premature newborns

Monika Kamianowska, Marek Szczepański, Barbara Bebko and **Magdalena Andraka**
Medical University of Bialystok, Poland

Background: Congenital anomalies of kidney and urinary tract (CAKUT) occur with a frequency of about 1 in 500 live-born newborns, more often in premature newborns. According to the global registers, in 30-43% of cases, these defects cause the renal failure in children, which is a serious clinical problem. Ultrasonography is the basic method in diagnosing CAKUT in newborns and the first examination in the algorithm of recognizing these abnormalities.

Aim: The main aim of this work was to analyze the prenatal and postnatal CAKUT diagnoses in premature newborns.

Methods: A retrospective study included all newborns born prematurely between 34 0/6-36 6/7 week of pregnancy at the Department of Neonatology and Intensive Neonatal Care, Medical University of Bialystok, Poland between 01.01.2015 and 31.12.2016. 344 medical histories were analyzed.

Results: In prenatal examination, CAKUT was found in 1.7% of premature newborns. Postnatally CAKUT was diagnosed in 16% of all analyzed children (unilateral dilatation of the renal pelvis and the calyces (10.5%), bilateral dilatation of the renal pelvis and the calyces (1.7%), pelvicalyceal system duplication (1.7%), unilateral kidney agenesis (0.3%), bilateral kidney agenesis (0.3%), other defects (1.5%)); in 62.5% of premature babies, the ultrasound examination was normal; in 21.5% of cases the ultrasound examinations were not performed. CAKUT diagnosed prenatally was confirmed in the postnatal study.

Conclusions: Ultrasound examinations of the urinary tract should be performed in all premature newborns after birth, because of high frequency of CAKUT in this age group. Early diagnosis of congenital anomalies of kidney and urinary tract give the possibility to start further diagnosis and treatment.