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THE GENE POLYMORPHISM OF THE RENIN-ANGIOTENSIN (RA) SYSTEM AND TGF-BETA1 GENE PROMOTER IN THE PATHOGENESIS OF REFLUX NEPHROPATHY IN CHILDREN

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The status of RA system may be very important for evaluation of predisposition and development of RN in children with urinary tract infections (UTI) and vesicoureteral reflux (VUR). The aim of the study was to elaborate and/or optimise the methods of polymorphism identification: I/D of ACE gene, G(-6)A of ATG gene, A1166C of AT1R gene, C(-509) of TGF-β1 gene, and to establish of correlation between these polymorphisms and predisposition to RN. The study enrolled 52 children with diagnosed UTI and 52 healthy children. The polymorphisms were investigated using PCR method (I/D of ACE gene) or PCR-RFLP technique. No significant differences were found between the UTI and the control groups as far as distribution of the studied genotypes of ACE, AT1R and ATG genes were concerned. Both groups differed significantly as far as rates of CC homozygotes of TGF–β1 gene were concerned in relation to T allele (CT+TT) ($p<0.05$). In patients with VUR first episode of urinary tract infections was observed significantly earlier ($p<0.05$), and follow-up period was significantly longer ($p<0.001$) than in children without reflux. The rate of CC homozygotes of TGF–β1 gene in the group of children with VUR was significantly higher than in children without reflux ($p<0.05$). The children with documented reflux nephropathy were significantly older ($p<0.05$), and their follow-up periods were significantly longer ($p<0.01$) when compared to children with UTI without renal scars. Moreover, no statistically significant differences were found between patients with various genotypes within the studied group with regard to: age distribution, recurrence and severity of UTI, degree(s) of reflux, number of scars in kidneys, and serum concentration of creatinine The initial results suggest correlation between the polymorphisms CC of the studied gene TGF–β1 and VUR in children. *The study is supported by the State Committee for Scientific Research grant Nr 4 P05E 091 19*