

RENAL DAMAGE DETECTION BY ^{99m}Tc DMSA SCINTIGRAPHY IN CHILDREN WITH URINARY TRACT INFECTION

Ajdinović B, Krstić Z¹, Jauković Lj, Dugonjić S, Marković M

Institute of Nuclear Medicine, Military Medical Academy; ¹University Pediatric Clinic, Belgrade

AIM: To determine the incidence of abnormal ^{99m}Tc DMSA renal scintigraphy findings in children with urinary tract infection (UTI) and to evaluate the difference between the children with UTI and vesicourethral reflux (VUR) and children with UTI without VUR.

MATERIAL AND METHODS: ^{99m}Tc DMSA renal scintigraphy was done in 170 children with UTI, age from 1 month to 14 years, middle age 7.07, and 137 of them were girls and 33 were boys. In 88 children VUR were proved by micturating cystourethrography (MCU), and in 82 VUR could not be detected by MCU. In 13 of them grade of VUR was grade I, in 30 grade was II, in 23 grade was III, in 17 grade was IV, and grade V was in 5 patients. Findings of ^{99m}Tc DMSA renal scintigraphy were classified as: 1.- normal, 2. – probably normal, 3. – equivocal, 4. – probably abnormal, and 5. – abnormal. Statistical analysis was performed using χ^2 test.

RESULTS: In all patients abnormal findings were in 30% (51/170), normal findings were 62% (106/170) and equivocal were 8% (13/170). In patients with UTI and VUR incidence of abnormal findings was 49% (43/88), normal 43% (38/88) and equivocal findings were 8% (7/88). All patient with VUR grade V had abnormal findings (incidence abnormal findings was 100%). In children with VUR grade IV abnormal findings were 71%. In patient with VUR grade I – 77% findings were normal, in children with VUR grade II 53% findings were normal and in patient with VUR grade III 30% findings of renal scintigraphy were normal. In children with UTI without VUR incidence of abnormal findings was 10% (8/82), normal findings was 83% (68/82), and equivocal findings was 7% (6/82). The incidence of abnormal findings was significantly higher in children with UTI and VUR than in those with UTI without VUR ($p < 0.001$). Also the incidence was higher in children with VUR grade IV and V, than in children with VUR grade I ($p < 0.01$)

CONCLUSION: The incidence of abnormal findings was strongly related to the presence of VUR, as well as to the grade of VUR. Our results confirmed the importance of performing ^{99m}Tc DMSA renal scintigraphy in children with UTI.