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Is VCUG really necessary for children older than two years with recurrent urinary tract infection?

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Purpose: VUR incidence is around 1.0% in general population, but it occurs as high as 25.0-50.0% among children with UTI. Presence of VUR and UTI together is considered a very important risk factor in development of renal scar. After the first UTI urinary system imaging generally not recommended. If patients are of age between 2-24 months with recurrent UTI, guidelines suggests VCUG. For children >24 months with recurrent UTI, a large number of clinical and biochemical parameters evaluated for VCUG. However this modality could cause high gonadal radiation exposure, increased infection risk, in addition to higher costs and increased morbidity. Our aim is to investigate, is there any chance to discriminate High Grade VUR from others via 99mTc-DMSA scintigraphy in children >24 months with recurrent UTI.

Material-Methods: Patients whom >24 months, underwent 99mTc-DMSA scintigraphy and VCUG for recurrent UTI between 2010 and 2016 were retrospectively evaluated

in our database. Among them, if patients have normal scintigraphy, they included in the study. We calculated the possibility of high grade VUR in scintigraphy negative patients. VCUG accepted as gold standart for grading VUR.

Findings: There wasn't any high grade VUR in 42/44 kidney and 20/22 patients with scintigraphy negative patients. Both children with reflux were female with six and nine years old. Both refluxes were Grade 4 and 99mTc-DMSA scintigraphy had 95.5% NPV for high grade VUR.

Conclusion: Tc-99mTc-DMSA scintigraphy in >24 months children with recurrent UTI has high NPV for High Grade VUR. When it is remembered that, Grade 4 VUR can be removed with appropriate treatment and follow-up without surgery, 99mTc-DMSA scintigraphy is an logical alternative for this group of patients. Thus, much lower gonadal radiation exposure, decreased infection risk, much lower costs for medicare system and decreased morbidity can be achieved.

Biography

Fikri Selcuk Simsek is currently working at the Nuclear Medicine department of Firat University Medical Faculty, Turkey. He has many publications in reputed international journals and is an eminent researcher, representing his institution in many international conferences as well.

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