

# 13<sup>th</sup> WORLD NEPHROLOGY CONFERENCE

October 18-19, 2017 Dubai, UAE

## Imaging in children with urinary tract infections

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Urinary tract infection (UTI) is common in childhood, and most children recover without complications. Use of imaging to check for abnormalities or complications therefore needs to be targeted carefully. Because a renal ultrasound (US) is non-invasive and may give supplemental information about a child's risk for lower tract infections by showing bladder abnormalities, a renal US should be initially ordered study in children with UTI. Obtaining a voiding cystourethrogram (VCUG) with first UTI in all male patients, females younger than 3 years, children clinically suspected of having pyelonephritis, and those with US abnormalities has been recommended (bottom-up approach). Because of the risks and cost of the VCUG test, as well as its low yield (<10%) for clinically significant (i. e., high-grade) VUR, many have advocated obtaining VCUGs selectively. Another approach to imaging is the so-called "top-down" approach, where cortical renal scintigraphy (CRS) is obtained after initially US. Advocates of this approach cite that it focuses on identification of renal scarring, the long-term adverse effect that we are hoping to avoid, regardless of whether reflux is present or not. A normal CRS allows to safely dismissing the child without programming further investigation(s) as outpatient. On the contrary, in case of true acute pyelonephritis, investigation for VUR can be scheduled without waiting for a relapse. A first paper lends further support to this approach. Suson & Mathews 2014 retrospectively analyzing the clinical application of the American Academy of Pediatrics guidelines to a population of children with the first episode of febrile-UTI found that one third of those with abnormal renal scan have a normal US and 62% had an undiagnosed grade 3 or more VUR.

### Biography

Boris Ajdinovic is the Head of Institute for the Nuclear Medicine, Military Medical Academy, Belgrade. He is a Professor and has obtained Doctor of Science degree in Nuclear Medicine. He has graduated from University of Belgrade in 1978 and has obtained Nuclear Medicine specialization. He is an Instructor of Nuclear Medicine for students specializing in internal medicine and surgery from 1985. He has over 250 specialized and scientific published articles and is the recipient of many awards and honors.

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