



Abstract 005

Value of cortical scintigraphy with technetium-99m dimercaptosuccinic acid (99mTc DMSA) in Children with Acute Urinary Tract Infections

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Overview:

- The gold standard investigation for documenting acute pyelonephritis (APN) is cortical scintigraphy with technetium-99m dimercaptosuccinic acid (99mTc DMSA).
- Renal ultrasound (US) can be normal in the presence of APN.

Objectives: Accurate diagnosis of pyelonephritis using clinical and laboratory parameters is often difficult, especially in children. The main aims of this prospective study were to compare the value of renal sonography and cortical scintigraphy with technetium-99m dimercaptosuccinic acid (99mTc DMSA) in detecting renal involvement in acute urinary tract infections (UTI).

Methods: Between January 2011 to September 2012, 95 children diagnosed with UTI were assessed. A culture from a mid-stream urine specimen containing >1,000 CFU/mL was considered diagnostic of UTI. All children underwent imaging by renal ultrasound (US), voiding Cystourethrography (VCUG), and renal nuclear scan with Tc99m dimercaptosuccinic acid (DMSA).

Results: US abnormalities were seen in 42 children (45%). DMSA scan showed a parenchymal defect suggestive of pyelonephritis in 72 children (78%). Normal US findings did not rule out renal parenchymal involvement. Scintigraphy appeared to be more sensitive than US for renal involvement. The frequency and degree of initial renal parenchymal damage seemed to correlate with vesicoureteral reflux, but the most severe initial parenchymal defects were not associated with marked clinical or laboratory manifestations.

Conclusion: DMSA scans should be considered as a reference in the detection of renal scarring associated with acute urinary tract infection as this technique is more sensitive than US.