

## Possibilities of Dual-Energy Multislice Computed Tomography in the Primary Diagnosis of Urate Urolithiasis

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### Abstract

A dual-energy multislice computed tomography (MSCT) was performed in 30 patients with urate urolithiasis (70 % – male, 30 % – female). In the analysis of urate stones, half of the patients showed features in the form of a heterogeneous structure: a urate band (up to 1000 NU) and a denser (oxalate) core (more than 1000 HU) – presumably these are stones with a mixed structure. The average density of stones measured in this group was  $753 \pm 439,3$  HU. Out of 30 patients 8 underwent chemical analysis of the stones by IR spectrometry and X-ray phase analysis. In most cases, the result was positive, confirming the urate structure of the stones, obtained by the dual-energy MSCT method. Dual-energy computed tomography is effective in assuming the composition of the stones in the urinary system.

**Key words:** Dual-Energy Multislice Computed Tomography, Urolithiasis Disease, Chemical Composition of Stone.

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