

## Estimation of $^{99m}\text{Tc}$ -MAG3 clearance by single-sample methods and camera-based methods

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We compared single-sample methods, proposed by Russell et al. and Bubeck et al., and camera-based methods in calculating  $^{99m}\text{Tc}$ -MAG3 clearance, and determined camera-based methods that provide estimates comparable to those measured by the Russell method. Twenty-one patients underwent  $^{99m}\text{Tc}$ -MAG3 renal scintigraphy, and clearance was measured by the Russell method and Bubeck method. Various renogram parameters were determined based on the slope of the renogram and area under the renogram, and correlated with the clearance measured by the Russell method. Camera-based clearance was calculated with the obtained regression equations and with equations determined previously using the Bubeck method as a standard. The Bubeck method provided lower measures than the Russell method in high renal function. Clearance measured by the Russell method was well correlated with renogram parameters, and clearance calculated with the obtained regression equation was comparable to that measured by the Russell method. When camera-based clearance was predicted with the previous equation, it was lower than the result obtained by the Russell method in high function. In conclusion, there are systematic differences in  $^{99m}\text{Tc}$ -MAG3 clearance calculated by different methods. The camera-based methods obtained in this study appear to facilitate comparison of results obtained by the Russell method and camera-based method.

**Key words:**  $^{99m}\text{Tc}$ -MAG3, renal function, camera-based method, single-sample method