

## Determining optimal surgical care for patients with renal masses

Robert Abouassaly, MD, MSc, FRCSC

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The recent literature has emphasized the importance of renal function on life expectancy and cardiovascular morbidity. This has been demonstrated in both the medical<sup>1</sup> and surgical literature,<sup>2,3</sup> and has led to the expansion of the indications for partial nephrectomy in treatment of renal masses. In fact, the American Urological Association guidelines for the management of clinical stage 1 renal masses recommend partial nephrectomy be considered the standard of care in tumours <4 cm when judged to be technically feasible by a urologic surgeon.<sup>4</sup>

The current article evaluates the effect of warm ischemia time and other clinical variables on renal differential function measured by MAG3-lasix renal scintigraphy.<sup>5</sup> They conclude that factors associated postoperative renal function were not the same before and after 30 minutes, and that the rate of functional loss increases significantly after 30 minutes. However, drawing any firm conclusions or altering clinical practice based on these findings may not be advisable. Firstly, this study assessed renal function as a median of 10 days after surgery, which is more reflective of acute kidney injury rather than long-term renal function. And it is likely that long-term renal function is of greater clinical importance. Secondly, this article is severely limited by its small sample size. Performing multivariable analyses with such small numbers risks overfitting the model, and is statistically inadvisable. Nonetheless, this article confirms the findings of others that renal functional loss is not linearly associated with warm ischemia at the time of partial nephrectomy, and that functional deterioration appears to accelerate with time.<sup>6</sup> However, studies continue to find that any period of ischemia results in a negative effect on ultimate renal function.<sup>7</sup>

In summary, although level-1 evidence is lacking, observational studies suggest the importance of renal functional preservation in the treatment of small renal masses, which is best achieved with partial nephrectomy and minimization of renal ischemia when extirpation is deemed necessary. However, prospective, preferably randomized, studies are needed to more convincingly determine optimal surgical care in patients with renal masses.

Urological Institute, University Hospitals Case Medical Center, Cleveland, OH

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**Correspondence:** Dr. Robert Abouassaly, Urological Institute, University Hospitals Case Medical Center 11100 Euclid Ave, Mailstop LKD 5046, Office 4565 Cleveland, OH 44106; fax: 216-844-1900; robert.abouassaly@UHhospitals.org