

It's a wash(out): using CT enhancement characteristics to preoperatively predict renal tumor histology

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Referring to the article published on pp. 6790-6797 in this issue

CANTERDJ. It's a wash(out): using CT enhancement characteristics to preoperatively predict renal tumor histology. *Can J Urol* 2013;13(2):6798.

It has been well documented that the incidence of renal cell carcinoma (RCC) continues to increase,¹ and this increase is mostly due to the incidental discovery of small renal masses (< 4 cm) at the time of evaluation for unrelated causes,² i.e. non-specific abdominal/back pain. Despite this increased detection of renal masses, the cancer-specific mortality of RCC remains unchanged,³ and competing risks models that include patient comorbidities appear to demonstrate that many patients are more likely to die of non-kidney cancer causes.^{4,5} Furthermore, there is now robust literature documenting that it is oncologically safe to surveil many of these masses, since they exhibit a very low risk of progression to metastatic disease.⁶ When evaluating these small renal masses, the urologic surgeon wants to ensure that any intervention undertaken would provide the highest marginal return: simply put, the ideal patient would have a confirmed RCC and lifespan long enough to make the renal masses a legitimate source of concern, thereby making the inherent risks of surgical intervention acceptable. Thus, the overriding difficulty is how do we objectively identify these 'ideal' patients using preoperative patient and tumor variables.

In this issue of the *Canadian Journal of Urology*, Kopp et al present their initial data using CT enhancement characteristics and washout values to predict renal tumor histology. These objective measures appear to be most effective in differentiating papillary RCCs from non-papillary RCCs ($p < 0.001$).⁷ Although preliminary, this data is a starting point in trying to utilize imaging techniques to help better assess tumor risk. For

example, if the authors are able to validate their initial findings with data to correctly predict which tumors are benign (oncocytoma) or low-grade (chromophobe) by preoperative imaging, then practitioners can then use this data to make more data driven decisions instead of relying on instincts or biases.

From a more global standpoint, as quality metrics become more defined and measured, physician decision-making will become more scrutinized. As such, being able to incorporate as much objective, reproducible data into physician treatment recommendations will be required in order to ensure optimal patient 'inputs' as well as outcomes. □

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