Chemical shift MRI helps differentiate renal cell tumors more likely to metastasize

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Adding "chemical shift" techniques to MRI can help differentiate clear cell renal cell carcinoma from other types of renal cell cancer, a new study shows. That differentiation can help physicians better determine treatment for these patients.

The study, conducted at Massachusetts General Hospital in Boston, included 156 patients with proven renal cell cancer. Clear cell renal carcinoma contains microscopic areas of fat, which is not seen on conventional imaging, said Dr. Azadeh Elmi, lead author of the study. "Chemical shift MRI enables us to quantify even small amounts of fat," she said. The study found that chemical shift MRI was about 83% accurate in differentiating clear cell renal cell carcinoma from other types of kidney cancer.

Clear cell type is the most common type of kidney cancer, and it has the greatest potential to metastasize, said Dr. Elmi. Chemical shift MRI is a protocol that can be readily performed in kidney MRI at no additional cost, she said. "As we are moving toward less invasive treatment strategies for cancer patients, the need to better distinguish tumor characteristics is becoming greater. This study demonstrates that chemical shift MRI is a promising tool in renal cell cancer characterization before planning treatment. The surgeons can get better insight of the tumor biology and can plan before hand," Dr. Elmi said.

The study will be presented April 19 during the ARRS Annual Meeting in Washington, DC.

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