

Researchers discover that lymphocyte count indicates prognosis of patients with renal cell carcinoma

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Each year, kidney cancer is diagnosed in nearly 60,000 people in the U.S. Many of these patients undergo surgery to remove the affected kidney, but this procedure can be risky for the elderly and those who have other health problems. Unfortunately, the prognosis of kidney cancer patients often cannot be determined until tumor samples are surgically removed and evaluated. Now, researchers at Fox Chase Cancer Center have discovered that the lymphocyte count—which is routinely measured in laboratory tests—is a simple and effective prognostic indicator in patients with renal cell carcinoma (RCC).

Sunil Saroha, MD, medical oncology fellow at Fox Chase and lead author on the study, will be presenting the findings at the 2011 Annual Meeting of the American Society of Clinical Oncology on Sunday, June 5.

"There has been this need for looking at prognostic markers that are available prior to surgical procedures," says Saroha. "It would be nice to know before the surgery if the tumor is going to be aggressive and how aggressive we need to be, with the goal of individualizing therapies."

The level of lymphocytes, a type of white blood cell, was one possible prognostic indicator considered by Saroha, Tahseen Al-Saleem, MD, a cancer pathologist at Fox Chase, and their colleagues. RCC patients generally have a worse prognosis if they have a suppressed immune

system, which is indicated by low lymphocyte levels.

By evaluating data from more than 500 patients with the most common form of RCC—called clear cell RCC—who had their kidneys surgically removed at Fox Chase between 1994 and 2009, Al-Saleem and his colleagues found a clear relationship between low lymphocyte counts within three months prior to surgery and a poor prognosis.

The researchers found that lower lymphocyte levels were associated with a higher tumor grade, a higher pathologic tumor stage, the presence of distant metastases, and a higher TNM stage—a combined indicator of tumor stage, spread to regional lymph nodes, and distant metastasis. They also found that low counts were associated with a lower overall survival rate, even when they accounted for patient age, [tumor stage](#) and metastasis.

Although these findings should be explored further in prospective research studies, the researchers suggest that the lymphocyte count could factor into doctors' treatment decisions. "This simple test can really help us identify patients at the outset who are at risk of very aggressive disease and who may not do well with current therapies," Saroha says. For example, if a young RCC patient has a low lymphocyte count but is otherwise healthy, a doctor may decide to pursue more aggressive therapies, such as surgery and chemotherapy.

"On the other hand, the test may also identify patients who may not need as aggressive therapies as usual," Saroha adds. For example, about half of RCC patients are over 60 years old, and if one of these patients has other health problems and a normal lymphocyte count, a doctor may decide to monitor the patient rather than perform surgery. "The test may help individualize therapies, change clinical decisions and add therapies before or after the surgery," Saroha says.

Saroha also emphasizes the need for more studies that focus on only one subtype of RCC, as in this study. Previous studies have clumped together different subtypes of RCC [patients](#), even though there could be significant differences between them.

Provided by Fox Chase Cancer Center

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