

Liver cancers armed with many strategies for evading immune response

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(Medical Xpress)—Researchers at Roswell Park Cancer Institute (RPCI) have published findings that help explain how a common and particularly resilient form of liver cancer evades the body's natural antitumor responses. The study, published April 15 in the journal *Cancer Research*, a publication of the American Association for Cancer Research (AACR), is the first to examine the combined effect of immunosuppression on immune function in advanced hepatocellular carcinoma (HCC), the fifth-most-common cancer in the world and the third-leading cause of cancer-related mortality globally.

In a study involving 23 patients with [liver cancer](#), Yasmin Thanavala, PhD, a Professor of Oncology in the Department of Immunology, and colleagues measured multiple parameters of [immune suppression](#) simultaneously, revealing a previously undescribed picture of extreme immune dysfunction in patients with advanced HCC.

Therapeutic options for patients with inoperable HCC tumors are limited, the authors note. "Unfortunately, most patients with HCC are first diagnosed with the disease at an advanced stage or present with poor [liver function](#)," they write, "thereby preventing the use of potentially curative therapies." They concluded that the findings warrant further study in the clinical setting.

"We found that HCC patients accumulate an unusually high number and variety of immunosuppressive cells, which allows them to impede immunotherapies and facilitate [tumor growth](#)," says Dr. Thanavala, the study's senior author. "What we learned from this detailed analysis is that immunotherapies that have been shown to deplete these particular [suppressor cells](#) are likely to be effective in restoring immune function for HCC patients—especially when combined with approaches that bolster the cancer-fighting T cells."

Co-authors are Suresh Kalathil, PhD, and Amit Lugade, PhD, from the Department of Immunology; Austin Miller, PhD, Assistant Professor of Oncology in the Department of Biostatistics & Bioinformatics; and Renuka Iyer, MD, Associate Professor of Oncology and Co-Director of the Liver and Pancreas Tumor Program.

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The paper, "Higher frequencies of GARP+ CTLA-4+ Foxp3+ T regulatory cells and myeloid-derived suppressor cells in [hepatocellular carcinoma](#) patients are associated with impaired T cell functionality," is available online at <http://goo.gl/wwzdl>

Provided by Roswell Park Cancer Institute

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