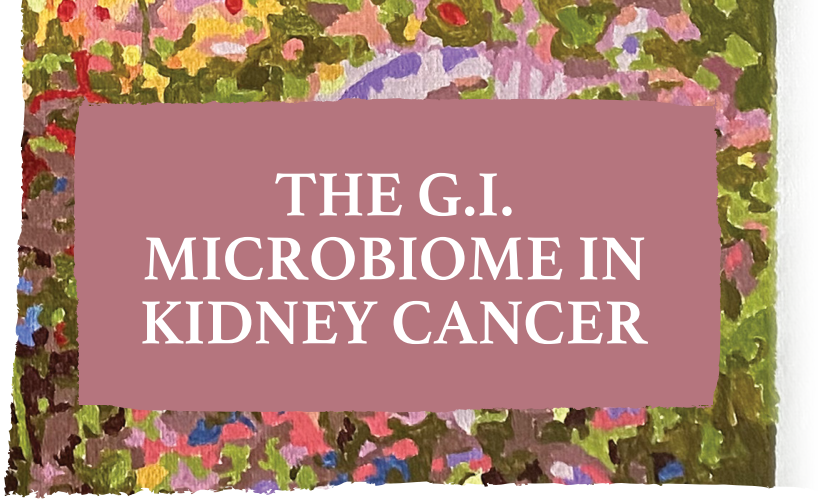
Healing Cancer at the Root
HYPERION
Functional Medicine



THE G.I. MICROBIOME IN KIDNEY CANCER

G.I. dysbiosis is being considered as one mechanism leading to the development of renal cell carcinoma. Kidney cancer tumors can occur when pathogenic microorganisms cause tissue cell death in normal tissue, cells can then transform into tumor cells because of effects on the genome, leading to signals that increase cell growth and decrease cancer cell death.

As in all cancers, tumor growth can be driven by increased inflammation generated by G.I. dysbiosis. Secretions released by pathogenic microbes can cause impaired immune cell reactions and immune defects so the cancer cells can avoid destruction by the patient's immune system, and in other words, the tumor cells are protected from an immune cell attack that would occur in normal cells. Existing clinical evidence shows that the gut may play a promoting role in the development of kidney cancer and its progression[1]. A study in 2022 found specific gut bacteria: Blautia, Streptococcus, and Romboutsia, were positively associated with renal cell carcinoma in patients. The study also showed that gut microbiota affected the progression of renal cell carcinoma[2].

The gut microbiome is being studied to determine its influence on the response to cancer treatments, specifically the efficacy and toxicity of chemotherapeutic and immunotherapeutic agents. Researchers are now finding that the composition of the bacteria in the gut can influence how the immune system responds to cancer cells and the ability to tolerate treatments. In kidney cancer, the composition of the gut microbiome may affect how patients respond to immune checkpoint inhibitors (ICIs). A randomized clinical trial found that a bacteria can modify the gastrointestinal (GI) microbiome and improve immunotherapy response in cancer patients, which could help improve treatment options for kidney cancer patients[3].

The inflammatory state of the G.I. system in the state of dysbiosis increases the risk of a leaky gut allowing microbes, food particles, and toxins to leak out from the intestine itself into the bloodstream. This creates a chronic inflammatory response that affects many systems in the body. The stress on healthy cells from chronic inflammation increases the risk of damage to their DNA and can lead to cancer cell development.

Bacteria in the gut send signals to the mitochondria, this has been observed to alter mitochondrial metabolism, activate immune cells, induce inflammation, and alter the intestinal barrier. Dysbiosis of the microbiome in the gut and the resulting mitochondrial dysfunction are associated with chronic intestinal inflammation and cancer[4].

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A comprehensive stool analysis is essential to evaluate the health of the cancer patient's microbiome and the overall function of the G.I. system. Hyperion functional medicine uses stool testing in patients who are in the Phase 1 Functional Oncology Program. The G.I. stool test is used to evaluate the microbiome for dysbiosis, potential for immune dysfunction, inflammatory markers, bacterial metabolites, infectious bacteria, parasites, and overall microbial diversity.

A detailed and stepwise functional treatment plan is made based on the results of the stool test which may include prescribed beneficial probiotics or prebiotic's, G.I. specific nutritional recommendations, pharmaceutical grade supplements to reduce inflammation as indicated, and botanical antibiotic treatment remedies based on the microbiome testing results.

CANCER ROOTS
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