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Pseudomyxoma peritonei (PMP) is a rare and slow-growing cancer of the abdomen. Many patients with PMP suffer for long periods of time with increasingly poor quality of life caused by the accumulation of mucin (a slimy mucous produced by cancer cells) in their bellies, leading to abdominal distention and pain. In this study, researchers looked into the differences between normal cells and cells from inside a PMP tumor using two different tests.

The first set of experiments tested the effectiveness of drugs (bevacizumab and aflibercept) that limit the tumor's ability to grow new blood vessels, which might limit the growth of tumors by taking away their nutrition. The study was successful, and the researchers concluded that the use of drugs that limit the ability of the tumor to grow its own blood vessels might be something to consider adding to existing PMP treatment.

In the second study, the researchers used techniques to analyze cancer cell DNA allowing them to confirm the presence of specific genetic differences between normal cells and PMP tumor cells. Scientists were able to identify several molecular "markers" found in PMP tumor cells that differed from the normal cells. These mutations are not found in normal cells, but in PMP patients, two of the mutated genes identified (KRAS and GNAS) are also found much more often than would be seen in other types of cancer. Knowledge about these genetic differences may help scientists to develop drugs that can target the specific changes seen in the cells of patients with PMP, and may even help point a way to a cure. Even if it is not possible to find an absolute cure, targeting specific genes that can reduce the amount of mucin produced by cancer cells, and this may help patients live with less pain and discomfort, and may even extend their lives.