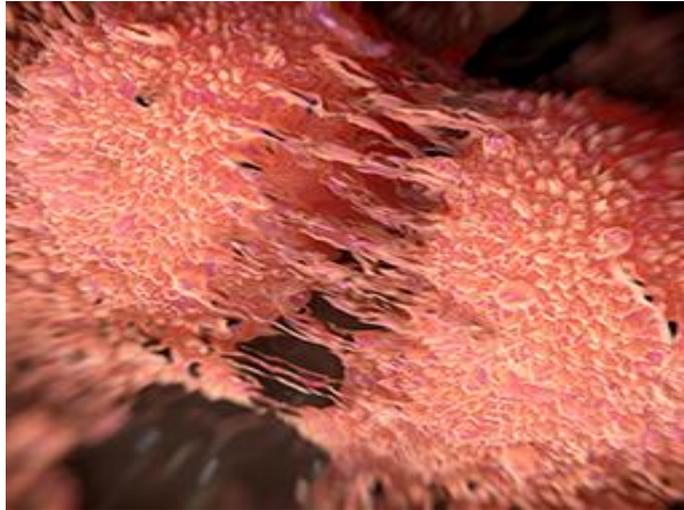


## PROSTATE CANCER 2016: NEW SURGICAL OPTIONS, BETTER SCREENING



New surgical options. Blood tests that can detect a single cancer cell. Molecular imaging. These are among the advances expected in prostate cancer research and treatment in 2016. To learn more, we spoke with two of City of Hope's prostate cancer experts, Clayton Lau, M.D., director of the Prostate Cancer Program, and Sumanta Kumar Pal, M.D., assistant clinical professor in the Department of Medical Oncology & Therapeutics Research.

Lau, an associate clinical professor in the Department of Surgery, was named interim chief of the Division of Urology and Urologic Oncology in 2015. The focus of his research is improving laparoscopic and robotically-assisted procedures for cancer of the genitals and urinary organs.

Pal, co-director of the Kidney Cancer Program, joined City of Hope in 2009. He has published more than 80 papers in peer-reviewed journals and presented his work in numerous forums around the world. Here, Lau and Pal answer five questions about new directions in prostate cancer treatment and research in the coming year.

### **1. What treatment advances do you expect for prostate cancer patients in 2016?**

Removing the prostate gland, a procedure known as a prostatectomy, is a new treatment approach for patients with metastatic cancer, and one that will quickly gain ground, Lau said.

"Before, these patients would only get systemic treatments such as hormone therapy, ablation and chemotherapy," Lau said. In the area of diagnostics, Pal foresees new tests that are more sensitive than the test for prostate-specific antigen, or PSA, which is now used to diagnose prostate cancer.

"We are doing a lot of work in terms of identifying the characteristics of single cancer cells that are floating through the bloodstream," Pal said. "These types of tests will go beyond the established tests, such as the PSA, and will be more gene-based."

### **2. How significant are these developments?**

Removing the prostate gland, a procedure known as a cytoreductive prostatectomy, is a new treatment approach for patients with metastatic cancer, and one that will quickly gain ground, Lau said.

“It may also decrease the chance that these patients will develop horrible local issues, such as ureteral obstruction and hematuria,” he said. Hematuria is blood in the urine. Identifying cancer through blood tests would allow doctors to accurately track prostate cancer after diagnosis, Pal said.

“One of the biggest challenges in prostate cancer is that the disease evolves over time,” Pal said. “To understand how it is evolving we often have to resort to biopsies, which are painful for the patient and are often difficult to acquire.”

The goal of the tests now in development is to identify a single cancer cell in a patient’s blood sample. “This means we will be able to rely on a patient’s blood to manage the course of the disease over time,” Pal said.

### **3. How will these developments improve the patient experience or patient outcomes?**

“Cytoreductive prostatectomy may improve a patient’s survival,” Lau said. “And it may decrease the need for the additional surgeries or procedures that are often needed for locally advanced disease.” As for screening for cancer cells in the blood, that would allow prostate cancer treatment to become more precise, Pal said.

“Much like in breast cancer, in prostate cancer we now have the ability to start utilizing the genomic information we are getting from the blood,” Pal said. “This means we can tailor a therapy to a specific patient, and that therapy will be less painful, less invasive and more precise.”

### **4. What research progress do you expect in 2016?**

“In 2016 we will see the use of molecular imaging,” Lau said. “These molecular biomarkers will be used as prognostic tests in patients to help us to better characterize their disease.” For Pal, harnessing the power of the human immune system holds great promise.

“I’m most excited about a project we are doing with Stephen Forman,” Pal said, referring to Stephen Forman, M.D., Francis & Kathleen McNamara Distinguished Chair in Hematology and Hematopoietic Cell Transplantation and the director of the T cell Immunotherapy Laboratory at City of Hope.

“We are investigating a prostate cancer therapy that uses CAR-T cells, which are engineered immune cells that can antagonize prostate cancer,” Pal said.

### **5. Overall, where is the field of prostate cancer treatment and research moving?**

The use of biomarkers, which are measurable changes in human cells, tissues or fluids, will play a large role in the future, Lau said.

“The key is to discern the aggressive cancers from the indolent ones,” Lau said. “This will be achieved with the use of molecular biomarkers.”