

CANCER 2016: MORE POWERFUL TREATMENTS, MORE INDIVIDUALIZED APPROACHES



Precision medicine, immunotherapy, clinical trials ... 2016 will be a year of many changes in science and medicine – and nowhere is this more obvious than in the field of cancer research.

Cancer treatments are becoming more powerful, less toxic and increasingly individualized by patient and by tumor. Researchers are enlisting the immune system in the body's fight against cancer's many forms. And years-long research projects are maturing into human clinical trials of new drugs and new therapies.

Looking ahead to 2016, City of Hope experts are enthusiastic about the impact of recent treatment advances, predicting better outcomes for people with many types of cancer, including lung and blood cancers. They're even more optimistic about the advances to come, the ones currently in development in the lab and in the clinic.

Each type of cancer is of course complex. The subtypes add to that complexity, as do the individual characteristics of each person and his or her disease. Here, we offer a glimpse into the future for some of those cancers.

Bladder cancer 2016: 'Coordinated care pathways' and immunotherapy

“Before, traditional chemotherapy used to cause a whole host of side effects such as nausea, vomiting, fatigue and so on. Now, immune-based treatments have improved quality of life in all respects. Patients may live longer and may have less suffering due to side effects.”

–Sumanta Pal, M.D., assistant clinical professor in the Department of Medical Oncology & Therapeutics Research

Brain cancer 2016: Using CAR-T cell therapy to fight tumors

“The research being done with CAR-T cells is groundbreaking. It will change the way we approach brain tumors.”

–Behnam Badie, M.D., chief of the Division of Neurosurgery

Breast cancer 2016: Dramatic advances create revolution in treatment

“We're seeing very promising advances in several directions, such as in systemic therapies, where the focus is moving to drugs that target abnormalities in the cancer cell that are unique to each patient. We're also looking to

provide individualized treatment for breast cancer patients, which means less chemotherapy, less surgery and less radiation.”

–Joanne Mortimer, M.D., co-director of the Breast Cancer Program, and vice chair and professor in the Department of Medical Oncology & Therapeutics Research

Colorectal cancer 2016: Robotic surgery, more screening options

“Treatment and research are emphasizing minimally invasive, genetically targeted and personalized approaches to treatment.”

–Stephen M. Sentovich, M.D., chief of the section of Colon and Rectal Surgery

Leukemia 2016: More treatments will target leukemia by type

“For acute leukemia in 2016, we anticipate seeing more targeted therapies that are more specific to the leukemia type. This includes immunotherapy; antibodies and immunoconjugates, which are antibodies that are attached to drugs; and molecularly-targeted small molecules – all of which will be specific to certain types of leukemia.”

–Stephen J. Forman M.D., leader of the Hematologic Malignancies and Stem Cell Transplantation Institute, and the Francis & Kathleen McNamara Distinguished Chair in Hematology and Hematopoietic Cell Transplantation

Liver cancer 2016: From immunotherapy to gene therapy and beyond

“Viral therapy is going to be really hot in the next six to 12 months. Fifteen years ago, when I began working with viral therapy, it was thought to be so radical. Now, it’s a whole new field that is exploding.”

–Yuman Fong, M.D., chairman of the Department of Surgery

Lung cancer 2016: New drugs, more screening point to a brighter new year

“Each tumor is unique, and each immune system is unique, so we are working on the ultimate personalized therapy. We are moving toward being better able to have precision medicine for each tumor and each patient -- very personal treatment with less toxicity and with improved outcomes.”

–Karen Reckamp, M.D., co-director of the Lung Cancer and Thoracic Oncology Program

Lymphoma 2016: Targeted therapies, immunotherapy and better outcomes

“With so many different types of drugs being tested, as well as immunotherapy research, it’s a very exciting time for the lymphoma field. We understand the molecular biology behind lymphoma and the subtypes of lymphoma much better today, which is helping us develop new therapies in the field.”

–Robert W. Chen, M.D., assistant professor in the Department of Hematology & Hematopoietic Cell Transplantation

Myeloma 2016: New antibodies, T-cell therapy show great promise

“Patients who have not responded to other treatments are having more success with immunotherapies and that is truly remarkable. We now have the potential to study these therapies in other novel combinations that could improve the survival rate, as well as long-term remissions, for multiple myeloma patients.”

–Amrita Y. Krishnan, M.D., director of the Multiple Myeloma Program

Prostate cancer 2016: New surgical options, better screening

“In 2016 we will see the use of molecular imaging. These molecular biomarkers will be used as prognostic tests in patients to help us to better characterize their disease.”