

Penn's Gynecologic Oncology Research Program Studies Immune Therapy in Ovarian Cancer

Only 40 percent of women who are diagnosed with advanced ovarian cancer survive longer than five years. Finding new and effective treatments for advanced ovarian cancer is critical. Penn's Gynecologic Oncology Research Program is at the forefront of research advances in the field, finding more encouraging treatment options for women with gynecologic cancer than ever before.

“Currently, Penn's main research interests focus on the immune biology and immune therapy of ovarian cancer. Our laboratory was the first to discover that the presence of certain immune cells, tumor infiltrating T-cells, can predict an improvement in the outcome of patients with advanced ovarian cancer. Our team of physicians and scientists perform groundbreaking clinical and basic science research to develop new treatments for recurrent and advanced cancer and new approaches for cancer detection and prevention.”

– George Coukos, MD, PhD
Director of Gynecologic Oncology Research
Department of Obstetrics and Gynecology
University of Pennsylvania Health System

Immune Therapy Research

Penn researchers identified the presence of tumor-infiltrating T-cells in 102 of 186 women with ovarian cancer tumors. Among the advanced ovarian cancer patients with these T-cells, 38 percent were alive five years after their cancer diagnosis while only 4.5 percent of the women without these T-cells were still alive. Among the patients who received aggressive chemotherapy, those who had tumor-infiltrating T-cells were more likely to survive than patients without T-cells. A subset of patients who had optimal surgical resection, complete response to chemotherapy, and evidence of anti-tumor response, experienced up to a 70 percent survival at ten years — a remarkable survival rate for advanced ovarian cancer.

This study, published in the *New England Journal of Medicine*, marks the first time that researchers have found that a spontaneous immune response against cancer influences the course of the disease.

Dr. Coukos and his team are now investigating why some patients' immune systems attack tumors while others do not. The answer could improve ovarian cancer survival outcomes by yielding new treatment modalities that induce anti-tumor responses in the later group.

Dr. Coukos and Christina Chu, MD, in collaboration with Carl June, MD, and other investigators from the Abramson Cancer Research Institute have launched the first therapeutic vaccine trial for patients with stage III and IV ovarian and peritoneal cancer in first remission or with recurrent early stage ovarian cancer in second remission. (See clinical trial on back.)

Additional therapies are under development in Dr. Coukos' laboratory including whole tumor antigen vaccines, T-cell therapies and combination therapies. Dr. Coukos anticipates that in the future, immunotherapy in combination with surgery and chemotherapy will become a standard of care for ovarian cancer.

Our Team of Faculty

Penn scientists and physicians from the Department of Obstetrics and Gynecology, the Center for Research in Reproduction and Women's Health, the Abramson Cancer Center of the University of Pennsylvania and the Joan Karnell Cancer Center at Pennsylvania Hospital are working together to increase our knowledge about gynecologic cancers and to find new ways to prevent and treat these diseases.

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Carl June, MD

Director, Translational Research
Professor, Department of Pathology and Laboratory Medicine
Abramson Cancer Center of the University of Pennsylvania

Clinical Trial

Randomized Phase I/II Pilot Study of the Immunogenicity of Cyclophosphamide with Peptide Pulsed Mature Dendritic Cells for Patients With Previously Treated Ovarian Epithelial or Primary Peritoneal Carcinoma

The doctors at the Hospital of the University of Pennsylvania, along with Immuno-Designed Molecules, Inc., are studying patients with ovarian cancer in an attempt to find better ways to treat ovarian cancer. The purpose of this study is to determine if using a vaccine made from a patient's own white blood cells can stimulate the body's immune system to attack their cancer. The investigators will also be evaluating the vaccine's safety.

The investigators are actively seeking patients to participate in this study. To find out participant requirements, please call Christina Chu, MD, at (215) 662-3318 or Denise Bendig, BSN, at (215) 746-3637.

Internet Resources

Oncolink, the Abramson Cancer Center's award-winning Internet resource, contains information about all aspects of cancer, the latest treatments, clinical trials, research advances, patient support services, and related issues. Access information from the Abramson Cancer Center, the National Cancer Institute, and other sources. Connect to Oncolink at: www.oncolink.upenn.edu.

Additional information about our gynecologic oncology program is available at: www.pennhealth.com/obgyn.

Locations

Hospital of the University of Pennsylvania
1000 Courtyard Building
3400 Spruce Street
Philadelphia, PA 19104

Pennsylvania Hospital
Spruce Building, 7th floor
801 Spruce Street
Philadelphia, PA 19107

Chestnut Hill Hospital
8811 Germantown Avenue
Philadelphia, PA 19118

Abramson Cancer Center of the University of Pennsylvania
16 Penn Tower
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Philadelphia, PA 19104

Joan Karnell Cancer Center at Pennsylvania Hospital
230 W. Washington Square
Farm Journal Building, 2nd Floor
Philadelphia, PA 19107

To refer a patient and/or consult with a doctor:

Call PENNLine: 1-800-635-7780

Please contact your UPHS physician liaison with any concerns or problems you may experience when referring your patient.

