New Model Predicts Survival for People With Bladder Cancer Receiving Immunotherapy

Summary includes updated data not in the abstract
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Expert Perspective

“Advances in immunotherapy have come quite quickly over the past decade, and we’ve had tremendous success treating many previously difficult-to-treat cancers, such as bladder cancer. It’s important to remember, however, that it is the minority of patients who have long-term responses to these therapies, and we currently have no means of pinpointing who these patients are. As this study demonstrates, prognostic models may help us apply immunotherapy to patients who stand to derive the most benefit,” said ASCO Expert Sumanta K. Pal, MD, moderator of today’s presscast.

ALEXANDRIA, Va. – Researchers have developed a model to predict overall survival for people with advanced urothelial cancers treated with the immune checkpoint inhibitor atezolizumab. The model, which is based on six clinical factors, may help inform treatment decisions for use of atezolizumab in these patients. These findings will be presented at the upcoming 2018 Genitourinary Cancers Symposium in San Francisco, California.

“In just the past few years, the U.S. Food and Drug Administration has approved five new immunotherapies for urothelial cancers,” said lead study author Gregory Pond, PhD, associate professor, McMaster University, Hamilton, Ontario, Canada. “Based on the rapid availability of new therapies, we thought it was important to try to assess which patients might benefit the most from atezolizumab, which is one type of these new therapies. We believe we’ve developed the first prognostic model that, once confirmed in larger studies, could provide a critical decision-making tool for clinicians.”

About the Study

Urothelial cancers typically occur in the urinary system, and bladder cancers account for the majority of urothelial cancers; other types include ureter and renal pelvis cancers. An estimated
81,190 new diagnoses of bladder cancer will occur in the United States in 2018, and there will be an estimated 17,240 deaths.\textsuperscript{1} In 2017, bladder cancer was the sixth most commonly diagnosed cancer in the United States.

To develop the model, the researchers analyzed data from two clinical trials of PD-L1 inhibitor atezolizumab in people with advanced urothelial cancer that worsened despite cisplatin chemotherapy, which is the standard treatment for this disease. The model was developed based on data from 310 people enrolled in the phase II IMvigor210 trial, and then validated based on data from a phase I trial of 95 people with bladder cancer (PCD4989g).

**Key Findings**

Researchers considered various clinical factors that had been previously shown to predict survival in patients with advanced bladder cancer receiving chemotherapy, including performance status (a measure of patient’s ability to perform activities of daily living), the site of the primary tumor and sites of metastases, stage at diagnosis, various blood test results, smoking status, and prior therapies. In addition, they assessed PD-L1 status of immune cells, which is a marker for efficacy of atezolizumab.

The six factors that were ultimately included in the optimal prognostic model for overall survival were:

- ECOG performance status, which assesses how well a patient is able to perform activities of daily living
- Metastasis to the liver
- Elevated blood platelet count
- Increased neutrophil-lymphocyte ratio, a measure indicating whether inflammation is present
- Elevated lactate dehydrogenase (LDH) level, an indicator of tissue damage
- Anemia

The researchers found that patient survival was associated with the number of prognostic factors a patient had. In the Imvigor210 trial, the median overall survival was 19.6 months for those with 0-1 factors, 5.9 months for those with 2-3 factors, and 2.6 months for those with 4 factors or more.

**Next Steps**

“While other factors also affect overall survival, no others were observed to be statistically significant in this dataset,” said Dr. Pond. "That is also why further validation of this model is required, as we will need to check if the factors identified in this model are consistent across different datasets.”

The authors also hope to do some subgroup analyses to determine if people with specific characteristics may benefit more from atezolizumab immunotherapy than others. More research is
also needed to determine if this prognostic model could be applied to other patient populations or
other immunotherapies.

Genentech provided data for this study.

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PDQ Adult Treatment Editorial Board. “Bladder Cancer Treatment (PDQ®).” National Center for

View the full abstract.

For your readers:

- Guide to Bladder Cancer
- Understanding Immunotherapy

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View the disclosures for the News Planning Team.

ATTRIBUTION TO THE 2018 GENITOURINARY CANCERS SYMPOSIUM IS REQUESTED IN
ALL NEWS COVERAGE.

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About the American Society for Radiation Oncology:
The American Society for Radiation Oncology (ASTRO) is the world’s largest radiation oncology society, with more than 10,000 members who are physicians, nurses, biologists, physicists, radiation therapists, dosimetrists and other health care professionals who specialize in treating patients with radiation therapies. The Society is dedicated to improving patient care through professional education and training, support for clinical practice and health policy standards, advancement of science and research, and advocacy. ASTRO publishes three peer-reviewed journals, the International Journal of Radiation Oncology • Biology • Physics (redjournal.org), Practical Radiation Oncology (practicalradonc.org) and Advances in Radiation Oncology (advancesradonc.org); developed and maintains an extensive patient website, RT Answers (rtanswers.org); and created the Radiation Oncology Institute (roinstitute.org), a nonprofit foundation to support research and education efforts around the world that enhance and confirm the critical role of radiation therapy in improving cancer treatment. To learn more about ASTRO, visit www.astro.org, sign up to receive our news and follow us on our blog, Facebook and Twitter.

About ASCO:

Founded in 1964, the American Society of Clinical Oncology, Inc. (ASCO®) is committed to making a world of difference in cancer care. As the world’s leading organization of its kind, ASCO represents more than 40,000 oncology professionals who care for people living with cancer. Through research, education, and promotion of the highest-quality patient care, ASCO works to conquer cancer and create a world where cancer is prevented or cured, and every survivor is healthy. ASCO is supported by its affiliate organization, the Conquer Cancer Foundation. Learn more at www.ASCO.org, explore patient education resources at www.Cancer.Net, and follow us on Facebook, Twitter, LinkedIn, and YouTube.

About the Society of Urologic Oncology:
The Society of Urologic Oncology (SUO) was created in 1984 to enable qualified members primarily interested in the care of patients with malignant genitourinary diseases to meet for the purpose of discussion, development, and implementation of ideas to improve care. The Society and its bylaws conform to the guidelines and bylaws of the American Urological Association (AUA).

The purpose of the SUO is to develop educational and research initiatives and to study issues in urologic oncology and provide physician statements that represent a state of the art assessment of these issues to other organizations.

The Society also provides a forum for identifying the urologic oncologist as a physician with specific expertise in the study and treatment of genitourinary malignancies. In recognition of the
multidisciplinary efforts involved in the study and treatment of genitourinary malignancies, the Society seeks to incorporate multiple disciplines in achieving these goals. The Society supports the activities of multiple disciplines in the common objectives of seeking an increased understanding and successful treatment of genitourinary malignancies.

The SUO seeks to improve the care of patients with malignant urologic disease and to provide a forum for the discussion of problems relating to malignant urologic disease. Our objectives include: 1) Stimulating research in and the teaching of urologic oncology, 2) Disseminating the principles of urologic oncology to the medical profession at large, 3) Bringing urologists into a Society whose work is entirely, or principally with malignant disease, 4) Being identified as the most qualified organization on matters relating to urologic oncology, and 5) Standardize fellowship training in urologic oncology.

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