Medical Xpress

Prostate cancer treatment guided by new tool

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According to the Centers for Disease Control and Prevention, cancer is a leading cause of death in the United States. Unfortunately for American men, prostate cancer remains one of the deadliest cancers.

Early diagnosis and treatment are essential to decrease cancer mortality;

however, for many common types of cancer, including prostate, breast, thyroid, and cervical cancer, overtreatment is a growing concern.

Overtreatment can occur when an individual undergoes medical therapies for cancer that will not be symptomatic during their lifetime because the cancer is slow-growing and/or because the individual is expected to live only a few more years. This care can unnecessarily expose the patient to personal turmoil, costly treatment, and adverse effects of medication, radiation, or surgery.

The Veterans Aging Cohort Study (VACS) Consortium sought to give physicians and other medical professionals guidance on how to determine treatment in patients with prostate cancer.

Using electronic health record (EHR) data on over six million veterans in care included in the VACS-National sample, the VACS project team conducted two major investigations to better characterize personal life expectancy among veterans undergoing care.

The research led by Amy C. Justice, MD, Ph.D., C.N.H. Long Professor of Medicine (General Medicine), Yale School of Medicine, and professor of public health (health policy), and Yale School of Public Health and VACS Index Workgroup co-chairs Janet Tate, MPH, ScD, and Kathleen McGinnis, DrPH, was recently published in two journals, the European Association of Urology and Frontiers in Medicine.

In the first study, "Combining Charlson Comorbidity and VACS Indices Improves Prognostic Accuracy for All-Cause Mortality for Patients with and without HIV in the Veterans Health Administration," the team developed and validated a prognostic index based on routine clinical laboratory values and common comorbid medical diagnoses using both the VACS Index 2.0 and the Charlson Comorbidity Index (CCI), which was created in 1987 to help predict mortality in patients suffering from

simultaneous diseases. The study was published in *Frontiers in Medicine*.

Using these tools, along with data from the VA EHR (electronic health records), they developed analytic samples of patients with and without HIV using the VACS Index 2.0, the CCI, and the newly combined VACS-CCI.

The team found that the VACS-CCI model "was more accurate in determining risk of mortality among patients with and without HIV undergoing care at the VA," said first author McGinnis. "We believe that the VACS-CCI tool is an improved version of the VACS Index 2.0 and can be tested across other diseases to predict mortality."

The researchers then applied the validated VACS-CCI tool among men diagnosed with non-metastatic cancer to compare prognosis for non-prostate cancer mortality to prostate cancer mortality in the second paper , "Adaption and National Validation of a Tool for Predicting Mortality from Other Causes Among Men with Nonmetastatic Prostate Cancer."

In this *European Urology Oncology* study, the team performed a retrospective cohort study looking at patients' EHR data, who were diagnosed with prostate cancer over an 18-year period in all VA facilities across the country. Using this data, they compared the VACS-CCI to the CCI alone and found that the VACS-CCI "demonstrated improved validated discrimination."

Justice, lead author for the European Association of Urology publication and VACS Consortium Program Director, was pleased with the findings. "Importantly, the second paper shows that without applying the VACS-CCI, providers appear to be overly influenced by age. As a result, older men with excellent life expectancies were not undergoing curative treatment and younger men with poor life expectancies were," she said.

As a next step, the team will work with VA leaders to launch the VACS-CCI at VA hospitals nationwide and to add an "EHR decision support interface" to guide decision-making at the bedside.

More information: Amy C. Justice et al, Adaption and National Validation of a Tool for Predicting Mortality from Other Causes Among Men with Nonmetastatic Prostate Cancer, *European Urology Oncology* (2024). DOI: 10.1016/j.euo.2023.11.023

Combining Charlson Comorbidity and VACS Indices Improves Prognostic Accuracy for All-Cause Mortality for Patients with and without HIV in the Veterans Health Administration. *Frontiers in Medicine* (2023). DOI: 10.3389/fmed.2023.1342466. www.frontiersin.org/articles/1 … 023.1342466/abstract

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