New prognostic model predicts survival in advanced prostate cancer

October 21 2013

(Medical Xpress)—For men with advanced prostate cancer that has progressed after taking hormones and undergoing chemotherapy, getting an accurate prognosis is critical to determine the next steps for treatment.

But a good prognostic tool has been lacking in this setting, particularly since a new chemotherapy called cabazitaxel as been approved by the U.S. Food and Drug Administration as another line of treatment.

Now researchers at the Duke Cancer Institute have developed a tool for doctors to forecast the potential survival of individual patients, enabling them to better and rapidly assess whether to try additional rounds of treatment or seek clinical trials.

The findings are published online in the *Journal of the National Cancer Institute*.

"Several new treatments have been developed in recent years that prolong life for men with metastatic prostate cancer," said Susan Halabi, PhD, professor of biostatistics and bioinformatic at Duke and lead author of the study. "As a result, it's increasingly important to provide a clear prognostic picture that can help guide both doctors and patients to the best options."

In their study, Halabi and colleagues developed and validated the new prognostic tool using two different clinical trials of prostate cancer

patients whose cancer returned after they had undergone a regimen of docetaxel, the standard first-round chemotherapy that is used after hormone treatments have been ineffective.

The researcher's approach provides an understanding of the complex interactions between the host, the tumor factors and clinical outcomes.

By plugging in 17 variables – including pain intensity, measurable disease, race, age, body mass index and others - the researchers homed in certain key factors that were relevant to overall survival.

Of the 17 variables, nine were determined to be predictive of survival: how a patient's physical performance is rated on a scale of 0-2; the length of time since the first chemotherapy ended; how extensive the disease is; whether the disease has spread to the liver, lungs or other organs; how much pain the patient is experiencing; the duration of hormone use; and levels of hemoglobin, prostate specific antigen and alkaline phosphatase.

Two of those factors had not previously been used in prognostic models - the duration of hormone therapy and the amount of time since the first-round docetaxel treatment.

"Our findings provide a prognostic tool that relies on information tha is routinely collected in clinical practice and should be readily available," Halabi said. "For patients with metastatic prostate cancer who are appropriate candidates for second-line chemotherapy, this model can be helpful for guiding care. It could also be used during clinical trials to assign patients in risk groups based on measurable criteria."

Provided by Duke University