

Fox Chase Gleason scores better predict prostate cancer's recurrence after radiation

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–In a new study led by Fox Chase Cancer Center radiation oncologist Natasha Townsend, M.D., researchers have found that Gleason scores determined by pathologists at Fox Chase Cancer Center more accurately predict the risk of recurrence than Gleason scores from referring institutions. She presented the new research at the 53rd Annual Meeting of the American Society for Radiation Oncology on Monday, October 3.

When a man is diagnosed with prostate cancer, his tumor is assigned a Gleason score – a number between 2 and 10 indicating the aggressiveness of the cancer and likelihood that the cancer will spread to other parts of his body. In general, Gleason scores 2 to 6 are considered low, 7 is intermediate, and 8 to 10 are high. A [patients](#) Gleason score is used to make important treatment decisions.

Townsend and her team looked at the records of 1,649 men who had undergone radiation therapy at Fox Chase between 1994 and 2007. Fox Chase pathologists reviewed the cases of every patient referred to the Center from another institution and determined the Gleason score, so Townsend compared those scores to scores from pathologists at the referring institutions (e.g. urologists, private pathologists' offices, and other centers that specialize in prostate cancer treatment).

A minor increase or decrease in Gleason score can significantly alter a patient's treatment, says Townsend. "We learned that twenty percent, or one in five men, with a Gleason score 7 by the referring institution were determined to have a Gleason score 2 to 6 at Fox Chase," Townsend

added. "This is important because not only is the prognosis much better but, it changes what treatment might be recommended. For example, patients with Gleason 6 disease are more likely to be offered brachytherapy (i.e. prostate radioactive seeding) and uncommonly treated with androgen deprivation therapy, which strongly impacts quality of life."

Even greater benefits were seen in patients determined to have Gleason score 8 to 10 disease by the referring institution. "An alarming 58% of patients with Gleason score 8 to 10 disease in our study were unconfirmed. These patients were found to have lower Gleason scores and similarly better prognosis," says Townsend. Patients with Gleason score 8 to 10 are universally characterized as having "high-risk" disease and a common practice standard is treatment with combination external beam radiotherapy and hormone therapy. When the Gleason score is lower, physicians are more confident omitting hormone therapy and avoiding the side effects that go along with that treatment.

Pathologists who specialize in prostate cancer likely explain the difference between the Gleason scores. "Most cases were examined by an oncologic pathologist with a special experience in urologic pathology," says Tahseen Al-Seleem, M.D., Fox Chase pathologist and co-author on the study. "Cases with discrepancy in diagnosis or grading with the outside institutions were examined by a panel of at least two oncologic pathologists until a consensus diagnosis was reached."

Changing the Gleason score is meaningless however, unless the changes better predict how patients will do following treatment. "Historically, we know Gleason score 6 patients fare better than Gleason 7, who fare better than Gleason 8 to 10. Our study shows that the Fox Chase Gleason scores better predicted this pattern than the referring institutions. This reassures us that the changes made by Fox Chase pathologists were more accurate, enabling our doctors to better advise patients about treatment

options and outcomes," says Mark K. Buyyounouski, M.D., M.S., Fox Chase radiation oncologist and senior author on the study. "Quality treatment for [prostate cancer](#) begins with understanding how aggressive the cancer may be and how far along it may have progressed. This study is an example of how a second opinion about the biopsy results improves quality."

Provided by Fox Chase Cancer Center

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