3 Factors Help Chart Course of Prostate Cancer

BY JEFF EVANS
Senior Writer

ORLANDO — Looking at prognostic features of prostate cancer may help chart the course of primary or secondary treatments, investigators reported at a symposium sponsored by the American Society of Clinical Oncology.

Three studies showed the importance of *p53* gene expression, history of prostate-specific antigen (PSA) levels, and Gleason score in predicting the natural history of prostate cancer and its treatment response.

Abnormal *p53* Expression

A mutation of the *p53* tumor suppressor gene is an independent prognostic factor in predicting death from prostate cancer, according to results from the largest study of *p53* ever performed in men.

The *p53* gene is mutated in about half of all types of cancer, and cancers with the *p53* mutation tend to be clinically aggressive and difficult to cure, said Mingxie Che, M.D., of the department of pathology at Wayne State University, Detroit.

Tissue was available from 777 men with locally advanced prostate cancer who had participated in a clinical trial comparing short-term and long-term androgen deprivation in combination with radiation therapy (J. Clin. Oncol. 2003;21:3972-8).

The investigators detected abnormal *p53* in 168 patients (22%). Abnormalities in *p53* were detected more often at higher tumor grades: in 14% of cases with Gleason score 2-6, in 21% of those with Gleason score 7, and in 31% of those with Gleason score 8-10. Overall, 74 patients (10%) died from prostate cancer.

In multivariate analyses, patients who had abnormal *p53* were 77% more likely to die from prostate cancer and 60% more likely to develop distant metastases at 5 years, compared with men without abnormal *p53*.

High Annual Preoperative PSA Velocity

A high annual preoperative PSA velocity and a high Gleason score in a biopsy specimen are independent prognostic factors for relapse after radical prostatectomy, Deep A. Patel, M.D., reported in a poster session.

In a review of 202 men who underwent radical retropubic prostatectomy, 31 had biochemical recurrence, defined as a PSA level of 0.2 ng/mL or higher. None of the patients had nodal disease or received neoadjuvant androgen deprivation, which had a median follow-up of 48 months.

Estimated relapse-free survival at 5 years fell with increasingly higher PSA velocity, wrote Dr. Patel, a third-year resident in the department of radiation oncology at Stanford (Calif.) University. Estimated relapse-free survival at 5 years was lower in patients with a preoperative PSA velocity greater than 1 ng/mL per year than in patients with a preoperative PSA velocity of 1 ng/mL per year or less (76% vs. 97%).

Preoperative PSA velocity of more than 1 ng/mL per year was independently associated with a significant, nearly fivefold higher risk of biochemical relapse, compared with a PSA velocity of 1 ng/mL per year or less. Gleason scores of 7 or greater also were independently associated with an approximately fivefold higher risk of biochemical relapse, compared with patients who had Gleason scores of 6 or less.

Cumulative PSA Exposure and Gleason Score

Prostate cancer patients with a high cumulative exposure to PSA and a high Gleason score are at risk for low survival, said Eugeniu Banu, M.D., of the Georges Pompidou European Hospital, Paris.

In a review of 481 patients seen from 1983 to 2004 at a single center, risk groups defined by low or high cumulative exposure to PSA (lower or higher than 60 ng/mL) and low or high Gleason score (5-7 or 8-10) were significantly associated with the duration between prostate cancer diagnosis and death or loss of follow-up.

Only 30% of 76 patients in the highest-risk group (high cumulative exposure to PSA and high Gleason score) were alive at 5 years; patients in this group died or were lost to follow-up a median of 3.3 years after diagnosis, Dr. Banu reported during a poster session at the symposium, which was cosponsored by the Society of Urologic Oncology and the American Society for Therapeutic Radiology and Oncology.

In contrast, 86% of 206 patients in the lowest-risk group (low cumulative exposure to PSA and low Gleason score) were alive at 5 years; 42% were alive at 15 years. A median of 10.5 years passed before these patients died or were lost to follow-up. ■