

PATHOLOGY**Adenoid Cystic/Basal Cell Carcinoma of the Prostate Strongly Expresses HER-2/neu**

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Adenoid cystic/basal cell carcinoma (ACBCC) is a rare neoplasm in the prostate. Definitive treatment is warranted, as among 19 patients previously reported by us, 5 had extraprostatic extension and 4 were metastatic. The HER-2/neu (c-erbB-2) gene has been reportedly overexpressed in adenoid cystic carcinomas in other organs, but its status in prostatic ACBCC was uncertain. Immunohistochemical staining and in situ hybridisation were carried out in 13 patients with ACBCC (11 from transurethral resection, 2 prostatectomy). One patient had metastasis to the lung. Citrate buffer and steam heat were used for antigen retrieval. Ten acinar adenocarcinomas of varying grades were also immunostained as controls. Protein and mRNA expression were 2+ to 3+ (of 3+) in all patients with ACBCC, compared to a breast cancer control with strong reactivity, whereas protein expression was noted in only one acinar carcinoma and mRNA expression was absent in all acinar carcinomas. Benign acini expressed HER-2/neu only in the basal layer. The finding of strong, consistent HER-2/neu expression in ACBCC suggests that treatment with Herceptin (trastuzumab) may be effective in patients with this rare tumour.

Editorial Comment

This is a rare tumor composed of prostatic basal cells. Due to few cases reported, it was considered that the tumor had indolent biologic potential and some authors called the lesion “adenoid cystic-like tumor of the prostate gland” (1). In 2003, Iczkowski et al. (2) published the largest series calling attention to the potential aggressiveness of this tumor requiring ablative therapy. From a total of 19 patients, 5 showed extraprostatic extension on radical prostatectomy and 4 (21%) metastases: liver (2 patients), lung (2 patients), bowel (1 patient), and corpus cavernosum (1 patient). It is worth mention that the PSA was normal in most of the patients. Only 5 patients had elevated serum PSA of 4.5 to 9.2 ng/mL. This is an important finding with implication in the biochemical monitoring post-prostatectomy.

Based on the fact that HER-2/neu (c-erb-2) gene has been reportedly overexpressed in adenoid cystic carcinomas in other organs, Iczkowski and Montironi studied the expression of this gene in prostate tissue of 13 patients previously reported. Based on the finding that adenoid cystic/basal cell carcinoma of the prostate strongly expresses HER-2/neu we hope that treatment with Herceptin (trastuzumab) may be effective in patients with this rare and aggressive tumor.

References

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Detection of Life-Threatening Prostate Cancer with Prostate-Specific Antigen Velocity during a Window of Curability

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Background: Prostate-specific antigen (PSA) level is typically used as a dichotomous test for prostate cancer, resulting in over diagnosis for a substantial number of men. The rate at which serum PSA levels change (PSA velocity) may be an important indicator of the presence of life-threatening disease.

Methods: PSA velocity was determined in 980 men (856 without prostate cancer, 104 with prostate cancer who were alive or died of another cause, and 20 who died of prostate cancer) who were participants in the Baltimore Longitudinal Study of Aging for up to 39 years. The relative risks (RRs) of prostate cancer death and prostate cancer-specific survival stratified by PSA velocity were evaluated in the three groups of men by Cox regression and Kaplan-Meier analyses. Statistical tests were two-sided.

Results: PSA velocity measured 10-15 years before diagnosis (when most men had PSA levels below 4.0 ng/mL) was associated with cancer-specific survival 25 years later; survival was 92% (95% confidence interval [CI] = 84% to 96%) among men with PSA velocity of 0.35 ng/mL per year or less and 54% (95% CI = 15% to 82%) among men with PSA velocity above 0.35 ng/mL per year ($P < 0.001$). Furthermore, men with PSA velocity above 0.35 ng/mL per year had a higher relative risk of prostate cancer death than men with PSA velocity of 0.35 ng/mL per year or less (RR = 4.7, 95% CI = 1.3 to 16.5; $P = 0.02$); the rates per 100,000 person-years were 1240 for men with a PSA velocity above 0.35 ng/mL per year and 140 for men with a PSA velocity of 0.35 ng/mL per year or less.

Conclusions: PSA velocity may help identify men with life-threatening prostate cancer during a period when their PSA levels are associated with the presence of curable disease.

Editorial Comment

PSA velocity may help monitor patients in a period of “watchful waiting”. Due to rising frequency of prostate cancer detected in clinical stage T1c a higher number of cases have criteria for “insignificant” cancer and patients may elect “watchful waiting”. The term “insignificant” is not proper because it may imply that the tumor is latent (dormant or indolent). Unfortunately there is no marker for the biologic behavior of prostatic adenocarcinoma. The best term is “minimal volume carcinoma” and some predictive criteria include absence of Gleason grade 4 or 5, a maximum of 2 cores showing tumor and no more than 50% of the area of the core involved. Clinical stage must be T1c and PSA density less than 0.15 ng/mL (1). During the period of “watchful waiting” besides PSA velocity, free/total PSA should also be monitored and, very important, an annual needle prostatic biopsy. The reason for the biopsy is to detect an eventual change in extension and/or Gleason grading.

References

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