Significance of the CAG Repeat Polymorphism of the Androgen Receptor Gene in Prostate Cancer Progression

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Introduction
Pathologic stage, Gleason score (GS), and serum prostate specific antigen (PSA) are well-established prognostic factors for prostate cancer. Standard treatment for the early stage prostate cancer includes surgery, radiation therapy (external beam or brachytherapy, possibly combined with hormonal therapy), or observation, also termed "watchful waiting". Determining the prognostic factors for prostate cancer is critical. All of the potentially curative therapies are associated with significant complications; these risks can be justified only if the treatment has a reasonable chance of achieving a cure. In this study, the researchers reported the androgen receptor gene alleles with CAG repeats as a prognostic factor for prostate cancer recurrence.

Method
The genes from leukocyte DNA from 318 men with prostate cancer treated with radical prostatectomy were sequenced using PCR-based direct sequencing method.

Results
- GS, stage, and levels of PSA at diagnosis predicted tumor recurrence.
- 18 or fewer CAG repeats in the androgen receptor gene also predicted recurrence, but only in men at low-risk (GS 2-6, pathologic stage T2a, and PSA ≤ 10 ng/mL).

Discussion
In this study, the risk of prostate cancer recurrence among patients otherwise considered to be at low-risk for recurrence was increased for those with 18 or fewer CAG repeats in the androgen receptor gene. The findings may have potential implications for the management of patients with clinically localized prostate cancer. However, further studies in a larger population are needed to confirm these findings.