Value of Tracking Biopsy in Men Undergoing Active Surveillance of Prostate Cancer

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Abstract

Purpose:

We compared the upgrading rate obtained by resampling precise spots of prostate cancer (tracking biopsy) vs conventional systematic resampling during followup of men on active surveillance.

Materials and Methods:

From 2009 to 2017 in 352 men prostate cancer was Gleason 3 + 3 in 268 and Gleason 3 + 4 in 84 at initial magnetic resonance imaging-ultrasound fusion biopsy. These men subsequently underwent a second fusion biopsy. At the first biopsy session all men underwent 12-core systematic biopsies and, when magnetic resonance imaging visible lesions were present, targeted biopsies. All cancerous sites were recorded electronically. During active surveillance at a second fusion biopsy session 6 to 18 months later tracking and systematic nontracking samples were obtained. The primary outcome measure was an increase in Gleason score (upgrading) at followup sampling, which was stratified by biopsy method.

Results:

Overall 91 of the 352 men (25.9%) experienced upgrading at the second biopsy during a median 11-month interval. The upgrade rate in the Gleason 3 + 3 and 3 + 4 groups was 26.9% and 22.6%, respectively. The mean number of cores taken at second biopsy was 12.2 ± 3.3 in men with upgrading and 12.4 ± 4.1 in those who remained stable (p not significant). Men with grade 0 to 4 magnetic resonance imaging targets were all upgraded at approximately the

same rate of 20% to 30% (p not significant). However, 58.8% of the men with grade 5 magnetic resonance imaging targets were upgraded. Of the 91 upgrades 48 (53%) were detected only by tracking.

Conclusions:

The tracking function of magnetic resonance imaging-ultrasound fusion biopsy warrants further study. When specific sites are resampled in men undergoing active surveillance of prostate cancer, upgrading is detected more often than by nontracking biopsy.

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