Abstract

Estimating the individual benefit of immediate treatment or active surveillance for prostate cancer after screen-detection in older (65+) men.

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Abstract

A significant proportion of screen-detected men with prostate cancer is likely to be overtreated, especially in older age groups. We aim to find which groups of screen-detected older men (65+) benefit the most from Immediate Radical Treatment or Active Surveillance (AS) for prostate cancer, depending on age, screening history, health status and prostate cancer stage at detection. We used a microsimulation model (MISCAN) of the natural history of prostate cancer based on ERSPC data. Individual life histories are simulated with US comorbidity lifetables based on a random sample of MEDICARE data. Different screening histories are simulated and we count outcomes for men screen-detected from ages 66 to 72. For immediately treated men with low-risk disease (≤ T2a, Gleason 6) the probability of overtreatment ranges from 61% to 86% decreasing to between 37% and 46%, if they are assigned to AS. For intermediate risk men (≤ T2, Gleason 3 + 4) overtreatment ranges from 23% to 60%, which reduces to between 16% and 31% for AS. For high risk men (T3, or ≥ Gleason 4 + 3) overtreatment ranges from 11% to 51%. The disease stage at screen-detection is a critical risk factor for overtreatment. For low risk men, AS seems to significantly reduce overtreatment at a modest cost. For intermediate risk men, the decision between immediate treatment or AS depends on age and comorbidity status. Men screen-detected in a high risk disease stage may benefit from immediate treatment even beyond age 69. This article is protected by copyright. All rights reserved.

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