A Pilot Study to Evaluate the Role of Magnetic Resonance Imaging for Prostate Cancer Screening in the General Population.


Abstract

PURPOSE: To our knowledge the role of magnetic resonance imaging as a first line screening test for prostate cancer is unknown. We performed a pilot study to evaluate the feasibility of prostate magnetic resonance imaging as the primary screening test for prostate cancer.

MATERIALS AND METHODS: We recruited unselected men from the general population. Prostate multiparametric magnetic resonance imaging and random or targeted biopsies were performed in all patients, in addition to prostate specific antigen testing. We compared the performance of prostate magnetic resonance imaging and prostate specific antigen test results to predict prostate cancer.

RESULTS: Of the 47 recruited patients 18 (38.3%) had cancer while 29 (61.7%) had no evidence of cancer. The adjusted OR of prostate cancer was significantly higher for magnetic resonance imaging score than for prostate specific antigen level (2.7, 95% CI 1.4-5.4, p = 0.004 vs 1.1, 95% CI 0.9-1.4, p = 0.21). Among the 30 patients with a normal prostate specific antigen (less than 4.0 ng/ml) the positive predictive value in those with a magnetic resonance imaging score of 4 or more was 66.7% (6 of 9) and the negative predictive value in those with a magnetic resonance imaging score of 3 or less was 85.7% (18 of 21, p = 0.004).

CONCLUSIONS: In this pilot study we determined the feasibility of using multiparametric prostate magnetic resonance imaging as the primary screening test for prostate cancer. Initial results showed that prostate magnetic resonance imaging was better to predict prostate cancer than prostate specific antigen in an unselected sample of the general population.

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KEYWORDS: biopsy; magnetic resonance imaging; mass screening; prostate-specific antigen; prostatic neoplasms

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