METastasis Reporting and Data System for Prostate Cancer: Practical Guidelines for Acquisition, Interpretation, and Reporting of Whole-body Magnetic Resonance Imaging-based Evaluations of Multiorgan Involvement in Advanced Prostate Cancer.


Abstract

CONTEXT: Comparative reviews of whole-body magnetic resonance imaging (WB-MRI) and positron emission tomography/computed tomography (CT; with different radiotracers) have shown that metastasis detection in advanced cancers is more accurate than with currently used CT and bone scans. However, the ability of WB-MRI and positron emission tomography/CT to assess therapeutic benefits has not been comprehensively evaluated. There is also considerable variability in the availability and quality of WB-MRI, which is an impediment to clinical development. Expert recommendations for standardising WB-MRI scans are needed, in order to assess its performance in advanced prostate cancer (APC) clinical trials.

OBJECTIVE: To design recommendations that promote standardisation and diminish variations in the acquisition, interpretation, and reporting of WB-MRI scans for use in APC.

EVIDENCE ACQUISITION: An international expert panel of oncologic imagers and oncologists with clinical and research interests in APC management assessed biomarker requirements for clinical care and clinical trials. Key requirements for a workable WB-MRI protocol, achievable quality standards, and interpretation criteria were identified and synthesised in a white paper.

EVIDENCE SYNTHESIS: The METastasis Reporting and Data System for Prostate Cancer guidelines were formulated for use in all oncologic manifestations of APC.

CONCLUSIONS: Uniformity in imaging data acquisition, quality, and interpretation of WB-MRI are essential for assessing the test performance of WB-MRI. The METastasis Reporting and Data System for Prostate Cancer standard requires validation in clinical trials of treatment approaches in APC.

PATIENT SUMMARY: METastasis Reporting and Data System for Prostate Cancer represents the consensus recommendations on the performance, quality standards, and reporting of whole-body magnetic resonance imaging, for use in all oncologic manifestations of advanced prostate cancer. These new criteria require validation in clinical trials of established and new treatment approaches in advanced prostate cancer.