

MR Imaging and MR Spectroscopy of Adenocarcinoma of the Prostate

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Abstract

Introduction: We examined the impact of magnetic resonance (MR) imaging and MR spectroscopy on the diagnosis and management of prostate cancer. **Methods:** A Medline search was performed and the relevant articles reviewed. The salient points are discussed and summarised. **Results:** MR imaging with phased-array and endorectal coils is not recommended for routine staging. It has a complementary role in improving the accuracy of local staging in patients with intermediate risk based on Partin's nomogram. MR spectroscopy can be performed in conjunction with high-resolution anatomic MR imaging of the prostate. It exploits the increased choline and decreased citrate levels within malignant prostatic tissue compared with normal prostatic tissue, and can potentially improve the assessment of cancer location and extent within the prostate, as well as extracapsular spread in small retrospective studies. It also has the potential of providing a measure of the presence and extent of prostate cancer after therapy. **Conclusion:** MR imaging is indicated in staging patients with intermediate risk based on Partin's nomogram. Combined MR imaging and MR spectroscopy of the prostate is a promising imaging tool which can contribute to the diagnosis and management of prostate cancer when combined with clinical, biochemical and histological data. Large prospective studies must be performed to ascertain the true clinical value of combined MR imaging/MR spectroscopy for the management of prostate cancer patients.

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Key words: Chemical shift imaging, Endorectal coil, Extracapsular invasion, MR spectroscopy imaging, Prostate cancer

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