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MR Update of Genitourinary Oncology: Prostate

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Prostate MRI has spread widely for patients who suspected prostate cancer. Many techniques for better image quality and faster acquisition are used to improve prostate cancer diagnosis. In prostate multiparametric MRI, diffusion weighted image is considered most important. Multi-shot or segmented DWI is useful for better image quality. Zoomed EPI decreases the field of view to reduce image distortion. Calculated high B value DWI images are useful to highlight the diffusion-restricted area without additional image acquisition time. Accelerated imaging techniques are increasingly being implemented and compressed sensing is an example. We can obtain dynamic contrast-enhanced imaging with shorter temporal resolution than before by using the recent technique such as golden-angle radial sparse parallel (GRASP). MR fingerprinting allows simultaneous generation of quantitative maps (T1, T2 maps) and prostatae cancer show different characteristics from the normal tissue. Several recent studies are about microstructure imaging (luminal water imaging, VERDICT, hybrid multi-dimensional MRI, etc) and getting more quantitative information about the tissue composition of prostate cancer will be possible.

Keywords: Prostate, MRI technique