Abdulkarim Jamal, J Mol Genet Med 2018, Volume 12
DOI: 10.4172/1747-0862-C1-024

Whole body diffusion weighted MRI in the detection of skeletal metastasis: Our experience with 1.5 and 3 Tesla MRI

Abdulkarim Jamal
George Eliot Hospital, England
University of Warwick, United Kingdom

Introduction: Metastatic bone disease is a common manifestation of advanced cancers particularly breast, prostate and lung. Currently many hospitals rely on traditional imaging technique such as bone scan, CT scan and more recently PET CT scan for detection of metastases and assessment of treatment. Whole-body Diffusion Weighted Imaging (WB-DWI) is emerging as a promising bone marrow assessment tool for detection and therapy monitoring of bone metastases. Advantages of WB-DWI include the fact that no ionizing radiation is administered and no injection of isotopes or any contrast medium is necessary. Importantly, whole-body skeletal examinations are possible in reasonably short data acquisition times.

Methods: 110 whole body MRI examinations using 1.5 and 3 Tesla MRI and the image findings in skeletal metastases and comparison with other imaging modalities.

Results: WB-MRI outperforms bone scans+targeted X-rays in detecting bone metastases and performs as well as CT for lymph node evaluation in prostate cancer. FDG-PET and WB-DWI; both are more accurate than CT and bone scans for detecting bone metastases. WB-DWI used alone has equal performance to FDG-PET for detecting primary tumors and soft tissue metastases. DW-MRI needs to be combined with morphologic sequences to improve specificity.

Conclusion: Whole body MRI is promising new technique in the detection and assessment of treatment response in skeletal metastases in many malignancies. It has very high sensitivity and specificity; it is relatively quick to perform and does not need the injection of contrast agent or the use of ionizing radiation.

Biography

Abdulkarim Jamal had completed his Postgraduate training in Radiology in Leicester training scheme, UK, where he obtained the FRCR. Currently he is a Consultant Radiologist at George Eliot Hospital and a Visiting Research Fellow to Warwick University. His current research interest is in the field of reduction of intravenous contrast in CT examination and the effects on renal function where he had published several papers and whole body MRI.

jamal.abdulkarim@geh.nhs.uk

Notes: