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Whole body MRI in the detection of skeletal metastasis: Our experience with 3 Tesla MRI

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Introduction: Metastatic bone disease is a common manifestation of advanced cancers particularly breast, prostate and lung. Many hospitals rely on traditional imaging technique such as bone scan, CT scan and PET CT scan. However, all the above involve ionizing radiation. Whole-body DW imaging (WB-DWI) is emerging as a promising bone marrow assessment tool for detection and therapy monitoring of bone metastases.

Aim & Method: We present our local experience in whole body MRI using new Siemens Magnetum Skyra (2016) from June 2016-Jul 2017.

Findings: 92 examinations. 54 for Myeloma and 38 for prostate cancer

Myeloma: 31 abnormal scans with findings from tiny lesions of several millimetres to wide spread metastases.

Prostate: 29 abnormal scans with wide range of skeletal and lymph node metastases. 6 cases had false negative bone scan before the MRI.

Discussion:

Diagnosis of Bone Metastases: FDG-Pet, CT, MRI or Bone Scan?

145 studies for meta-analysis (lung(36),breast(25),prostate(7),other tumour types(44)).

FDG-PET = MRI; both are more accurate than CT and BS for detecting bone metastases(1).

Overall FDG-PET = MRI; both are more accurate than CT and BS for detecting bone metastases. DW-MRI 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 evaluates both bone and soft tissue disease and is better than CT scans and bone scans for infiltrative bony disease. Whole body MRI has high sensitivity and specificity in detecting bone metastasis and is equal to FDG PET, furthermore whole body MRI is relatively cheap and does not involve the use of radiation or the injection of radioisotope.

Biography

Jamal Abdulkarim has completed his Radiology training in University Hospitals of Leicester, UK and obtained FRCR. Currently he is a Consultant Radiologist at George Eliot Hospital, UK. He has interest in research particularly in the field of intravenous iodinated contrast media and published and presented several papers over the last few years.

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