

ESR Essentials: bone marrow MRI in oncology - practice recommendations by the European Society of Musculoskeletal Radiology

Electronic Supplementary Material

Clinical Reporting Template for Bone Marrow MRI

Table illustrating the proposed structured reporting for bone marrow MRI studies performed in metastatic cancer or myeloma, both for axial skeleton (AS-MRI) and whole body (WB-MRI) approaches.

Section	Axial Skeleton MRI (AS-MRI)	Whole Body MRI (WB-MRI)
Indication	Clinical context (staging, follow-up), symptoms, treatment	Clinical context (staging, follow-up), symptoms, treatment
Technique	• Magnet/field • Covered areas • Sequences • Protocol modifications	• Magnet/field • Covered areas • Sequences • Protocol modifications
Comparison	• Date of previous AS-MRI • Other examinations available	• Date of previous WB-MRI • Other examinations available
Bone Marrow Evaluation	• Marrow infiltration patterns (normal, focal, focal on diffuse, diffuse, micronodular) • Involved skeletal areas: spine (cervical → lumbar), pelvis, proximal femurs	• Marrow infiltration (normal, focal, focal on diffuse, diffuse, micronodular) • Involved skeletal areas: skull, spine (cervical → lumbar), scapular girdle, pelvis, ribs, sternum, long bones, other regions
Quantification of focal bone lesions Morphology: size, number Biomarkers	• Choose up to 5 bone lesions • Largest diameter	• Choose up to 5 bone lesions • Largest diameter • Measure FF and ADC in up to 5 lesions.
Fractures	• Presence • Location • Benign vs malignant based on morphology • Risk/mass effect (spine, cord, ...)	• Presence • Location • Benign vs malignant based on morphology and quantitative parameters • Risk/mass effect (spine, cord, ...)
Extraosseous evaluation	Extraosseous/ extramedullary disease	• Systematic organ screening • Lungs, liver, nodes, other
Quantification of extraosseous lesions Morphology: size, number Biomarkers	• Lesion size	• Choose up to 5 extraosseous lesions • Lesion size • Measure ADC in up to 5 lesions
Treatment Response Assessment Category (RAC)	• NA if baseline • Response / Stable / Progression	• NA if baseline • Response / Stable / Progression
Suggest a site for biopsy if necessary		
Incidental Findings	Report incidental/treatment-related findings (avascular necrosis, other neoplasms, others)	Report incidental/treatment-related findings (avascular necrosis, other neoplasms, others)
Conclusion	• Main lesions location • Response Assessment Category • Incidental findings	• Main bone/extraosseous lesions location • Response Assessment Category • Incidental findings