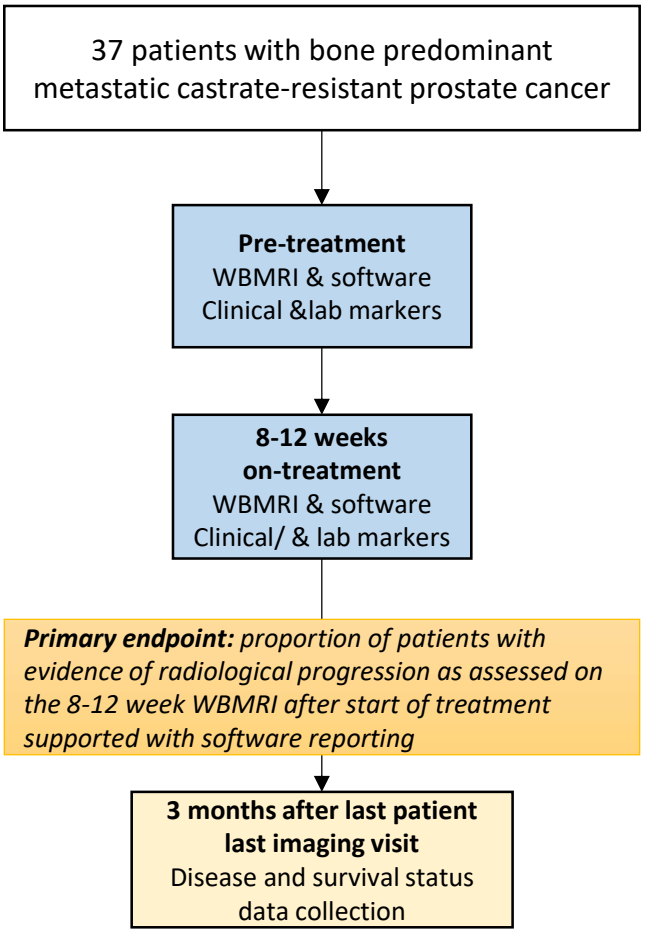
WISER-P TRIAL SUMMARY

PROTOCOL TITLE	Real-world testing of software for measuring bone disease on whole-body MRI in patients with prostate cancer – WISER-P
TARGET DISEASE	Advanced prostate cancer
TRIAL OBJECTIVES	**Primary objective:** To assess the performance of whole-body MRI (WBMRI), used with the novel software to document radiological progression of bone disease at 8-12 weeks from start of therapy in patients with bone predominant metastatic castration resistant prostate cancer (mCRPC). **Secondary objectives -** to assess the following: 1. Proportion of patients with radiological response as documented in the 8-12 weeks WBMRI with software reporting. 2. Proportion of patients for whom decision is made to discontinue treatment due to disease progression following the 8-12 week WBMRI with software reporting, taking into account imaging and all other available evidence. 3. Clinician's confidence in clinical decision making (continue/discontinue treatment) following the 8-12 week WBMRI with software reporting. 4. Proportion of patients who respond to treatment according to the clinician perspective following the 8-12 week WBMRI scan and all other available evidence. 5. Time to treatment discontinuation and reason(s) for treatment discontinuation. 6. Radiological progression free survival (rPFS), progression free survival (PFS) 7. Association between time to radiological progression and time to PSA progression.
TRIAL DESIGN	Prospective, multi-centre, single arm trial
TRIAL POPULATION	Patients with mCRPC and bone-predominant disease about to start systemic therapy (any line approved for this indication) and planned for treatment of disease progression in accordance with standard clinical practice at their centre.
RECRUITMENT TARGET	Assuming 2-sided 0.05 alpha for a one sample chi-square test and 10% dropout, 37 patients are required to show, with 90% power, that the proportion of patients experiencing radiological progression as documented with WBMRI+software is larger than 15% (as estimated for an historical conventional imaging control), when the true proportion in the WBMRI+software group is 40% or larger.
TRIAL INTERVENTION	All patients will undergo WBMRI prior to commencement of systemic treatment and again at 8-12 weeks with target of 8-9 weeks from start of treatment to align with PCWG3 guidelines. Following this 1st on-treatment scan, both this and the baseline WBMRI scan

	will be uploaded to a cloud-hosted imaging platform and the test whole-body MRI software applied for automated identification and segmentation of bone disease, and subsequent generation of a software output with highlighted areas of bone disease and cellular characteristics including TDV and ADV values. This output will be used by site radiologists as an adjunct to conventional qualitative image assessment of WBMRI for radiology reporting. Both the text-based report and software output will be available for review by the treating clinician, together with all other clinical evidence available at this time-point for decision making around treatment continuation or discontinuation. Radiological assessment afterwards will be as per local practice, and/or as clinically indicated. Clinical and laboratory assessments including disease symptoms, will be according to local practice and as clinically indicated. Disease and survival status will be assessed for all patients 3 months after last patient last on-trial WBMRI scan using information available within electronic patient records.
PRIMARY ENDPOINT	The proportion of patients with evidence of radiological progression as assessed using the 8-12 weeks WBMRI after start of treatment supported with software reporting.
SECONDARY ENDPOINTS	1. Proportion of patients with radiological response using the 8-12 weeks WBMRI with software reporting. 2. Proportion of patients for whom decision is made to discontinue treatment due to disease progression following the 8-12 week WBMRI with software reporting, taking into account imaging and all other available evidence. 3. Clinician's confidence in clinical decision making (continue/discontinue treatment) following the 8-12 weeks WBMRI with software reporting. 4. Proportion of patients who respond to treatment according to the clinician perspective following the 8-12 week WBMRI scan. 5. Time to treatment discontinuation and reason(s) for treatment discontinuation. 6. Radiological progression free survival (rPFS), progression free survival (PFS) 7. Association between time to radiological progression and time to PSA progression.
EXPLORATORY ENDPOINTS	1. Number of and time to skeletal-related events defined as either the use of external beam radiotherapy to relieve skeletal symptoms or the occurrence of new symptomatic bone fractures (vertebral or non-vertebral) or the occurrence of spinal cord compression or a tumour related orthopaedic surgical intervention. 2. Association between quantitative histogram parameters derived from the WBMRI software and patient outcomes 3. Concordance correlation coefficient between local and central WBMRI software report parameters including but not limited to %change in ADC and TDV.

	4. Proportion of cases where software parameters indicate disease progression at the first on-treatment scan but treatment is continued.
FOLLOW UP	Patients will not have any follow-up visits beyond the 8-12 week on treatment imaging visit. A one-off assessment of disease and survival status for all enrolled patients will take place 3 months from the last patient last on-treatment imaging visit using information available within electronic patient records.

TRIAL SCHEMA



WBMRI: whole body Magnetic Resonance Imaging; Clinical & lab markers include disease symptoms (e.g. pain) & PSA, as per local practice.