

Supplementary Material

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Table S1. MRI acquisition parameters used by participating institutions					
MRI Sequence	Rio Hortega University Hospital, Valladolid, Spain	12 de Octubre University Hospital, Madrid, Spain	St. Olavs University Hospital, Trondheim Norway	Case Western Reserve University, Cleveland, USA	University of Pennsylvania, Philadelphia, USA
Manufacturer, model and Field strength	General Electric, Signa HDxT, 1.5 T	General Electric, Signa Premier, 3 T	Siemens, Skyra, 3 T	Siemens, Avanto, 1.5 T	Siemens, TrioTim, 3 T
T1ce	TR/TE/FA, 7.98 ms/2.57 ms/12°; 3D; GRE; FOV, 220 x 220 mm; matrix, 512 x 512; slice thickness, 1 mm	TR/TE/FA, 6.82 ms/2.16 ms/12°; 3D; FSPGRE; FOV, 320 x 320 mm; matrix, 512 x 512; slice thickness, 1 mm	TR/TE/FA, 2000 ms/2.96 ms/8°; 3D; MPRAGRE; FOV, 256 x 256 mm; matrix, 256x 256; slice thickness, 1 mm	TR/TE, 589 ms/12 ms; 2D; TSE; FOV, 256 x 256 mm; matrix, 256x 179; slice thickness, 5 mm	TR/TE, 1760 ms/3.11 ms; 3D; GRE; FOV, 256 x 187 mm; matrix, 256x 192; slice thickness, 1 mm
T1w	TR/TE, 580 ms/7.56 ms; 2D; FSE; FOV, 220 x 220 mm; matrix, 512 x 512; slice thickness, 5 mm	TR/TE/FA, 6.85 ms/2.12 ms/12°; 3D; FSPGRE; FOV, 320 x 320 mm; matrix, 512 x 512; slice thickness, 5 mm	TR/TE/FA, 2000 ms/2.96 ms/8°; 3D; MPRAGRE; FOV, 256 x 256 mm; matrix, 256 x 256; slice thickness, 1 mm	TR/TE, 529 ms/12 ms; 2D; TSE; FOV, 256 x 224 mm; matrix, 256 x 224; slice thickness, 5 mm	TR/TE, 1760 ms/3.11 ms; 3D; GRE; FOV, 187 x 250 mm; matrix, 256 x 192; slice thickness, 1 mm
T2w	TR/TE, 5220 ms/96.12 ms; 2D; FRSE; FOV, 220 x 220 mm; matrix, 512 x 512; slice thickness, 5 mm.	TR/TE, 4322 ms/124.25 ms; 2D; FSE; FOV, 256 x 256 mm; matrix, 512 x 512; slice thickness, 4 mm	TR/TE, 4200 ms/88 ms; 2D; TSE; FOV, 256 x 256 mm; matrix, 512 x 359; slice thickness, 3 mm	TR/TE, 5000 ms/91 ms; 2D; TSE; FOV, 256 x 224 mm; matrix, 256 x 224; slice thickness, 5 mm	TR/TE, 5340 ms/85 ms; 2D; TSE; FOV, 240 x 195 mm; matrix, 256 x 208; slice thickness, 3 mm
FLAIR	TR/TE, 8002 ms/135.07 ms; 2D; FSE; FOV, 220 x 220 mm; matrix, 512 x 512; slice thickness, 4 mm	TR/TE, 9350 ms/142.56 ms; 2D; FSE; FOV, 320 x 224 mm; matrix, 512 x 512; slice thickness, 4 mm	TR/TE, 9000 ms/108 ms; 3D; TSE; FOV, 256 x 256mm; matrix, 256 x 256; slice thickness, 1 mm	TR/TE, 9000 ms/109 ms; 2D; TSE; FOV, 256 x 208 mm; matrix, 256 x 208; slice thickness, 5 mm	TR/TE, 9420 ms/141 ms; 2D; TSE; FOV, 240 x 180 mm; matrix, 256 x 192; slice thickness, 3 mm
DWI	TR/TE, 8000 ms/111.7 ms; FOV, 256 x 256 mm; matrix, 128 x 160; slice thickness, 5 mm; b-values, 0 and 1000 s/mm ²	TR/TE, 3780 ms/57.2 ms; FOV, 256 x 256 mm; matrix, 160 x 160; slice thickness, 3.5 mm; b-values, 0 and 1000 s/mm ²	TR/TE, 8130 ms/64 ms; FOV, 160 x 160 mm; matrix, 160 x 160; slice thickness, 3 mm; b-values, 0 and 1000 s/mm ²	TR/TE, 4700 ms/89 ms; FOV, 160 x 160 mm; matrix, 160 x 160; slice thickness, 5 mm; b-values, 0 and 1000 s/mm ²	TR/TE, 5000 ms/86 ms; FOV, 192 x 192 mm; matrix, 192 x 192; slice thickness, 3 mm; b-values, 0 and 1000 s/mm ²
T1ce = contrast-enhanced T1w, T2w= T2-weighted image, FLAIR = Fluid-attenuated inversion recovery, DWI = diffusion weighted image, TR = repetition time, TE= echo time, FOV = field of view. GRE = gradient echo. TSE = turbo spin echo. FSE= fast spin echo. FRFSE= fast recovery fast spin echo. FSPGR= Fast Spoiled Gradient Echo. MPRAGE= Magnetization Prepared Rapid Gradient Echo					

Table S2. Pyradiomics settings used for voxel-wise feature extraction	
Image Type Filter	Original: {} Wavelet: {} LBP3D: binWidth: 1.0 LoG: sigma: [1.0, 3.0, 5.0]
Feature Class	First order: <ul style="list-style-type: none"> - Energy - Total energy - Entropy - Minimum - 10th percentile - 90th percentile - Maximum - Mean - Median - Interquartile Range - Range - Mean Absolute Deviation - Root mean squared - Standard deviation - Skewness - Kurtosis - Variance - Uniformity Gray Level Co-occurrence Matrix (GLCM): <ul style="list-style-type: none"> - Autocorrelation - Joint Average - Cluster Prominence - Cluster Shade - Cluster Tendency - Contrast - Correlation - Difference Average - Difference Entropy - Difference Variance - Joint Energy - Joint Entropy - Informational Measure of Correlation (IMC) 1 - Informational Measure of Correlation (IMC) 2 - Inverse Difference Moment (IDM) - Inverse Difference Moment Normalized (IDMN) - Inverse Difference - Inverse Difference Normalized - Inverse Variance - Maximum Probability - Sum Entropy - Sum Squares Gray Level Run Length Matrix (GLRLM): <ul style="list-style-type: none"> - Short Run Emphasis (SRE) - Long Run Emphasis (LRE) - Gray Level Non-Uniformity (GLN) - Gray Level Non-Uniformity Normalized (GLNN) - Run Length Non-Uniformity (RLN) - Run Length Non-Uniformity Normalized (RLNN) - Run Percentage (RP) - Gray Level Variance (GLV) - Run Variance (RV) - Run Entropy (RE) - Low Gray Level Run Emphasis (LGLRE) - High Gray Level Run Emphasis (HGLRE) - Short Run Low Gray Level Emphasis (SRLGLE) - Short Run High Gray Level Emphasis (SRHGLE) - Long Run Low Gray Level Emphasis (LRLGLE) - Long Run High Gray Level Emphasis (LRHGLE) Gray Level Size Zone Matrix (GLSZM): <ul style="list-style-type: none"> - Small Area Emphasis (SAE) - Large Area Emphasis (LAE) - Gray Level Non-Uniformity (GLN) - Gray Level Non-Uniformity Normalized (GLNN) - Size-Zone Non-Uniformity (SZN) - Size-Zone Non-Uniformity Normalized (SZNN)

	<ul style="list-style-type: none"> - Zone Percentage (ZP) - Gray Level Variance (GLV) - Zone Variance (ZV) - Zone Entropy (ZE) - Low Gray Level Zone Emphasis (LGLZE) - High Gray Level Zone Emphasis (HGLZE) - Small Area Low Gray Level Emphasis (SALGLE) - Small Area High Gray Level Emphasis (SAHGLE) - Large Area Low Gray Level Emphasis (LALGLE) - Large Area High Gray Level Emphasis (LAHGLE) <p>Neighbouring Gray Tone Difference Matrix (NGTDM):</p> <ul style="list-style-type: none"> - Coarseness - Contrast - Busyness - Complexity - Strength <p>Gray Level Dependence Matrix (GLDM):</p> <ul style="list-style-type: none"> - Small Dependence Emphasis (SDE) - Large Dependence Emphasis (LDE) - Gray Level Non-Uniformity (GLN) - Dependence Non-Uniformity (DN) - Dependence Non-Uniformity Normalized (DNN) - Gray Level Variance (GLV) - Dependence Variance (DV) - Dependence Entropy (DE) - Low Gray Level Emphasis (LGLE) - High Gray Level Emphasis (HGLE) - Small Dependence Low Gray Level Emphasis (SDLGLE) - Small Dependence High Gray Level Emphasis (SDHGLE) - Large Dependence Low Gray Level Emphasis (LDLGLE) - Large Dependence High Gray Level Emphasis (LDHGLE)
Settings:	normalize: true normalizeScale: 100 binWidth: 25 interpolator: 'sitkBSpline' resampledPixelSpacing: [1, 1, 1] correctMask: true voxelArrayShift: 300 force2D: true force2Ddimension: 0
Voxel settings	kernelRadius: 1 [3 x 3 x 3] maskedKernel: true voxelBatch: 10000