

Table E1: Summary of scanning parameters

	H1	H2
Scanner name	Achieva, Philips Health Care	GE Signa Excite GE Medical Systems
Field Strength	3 Tesla	3 Tesla
Neurovascular Coil	16-channel	16-channel
T2-weighted		
Field of view	22–25	22–24
Matrix	min: 288, max: 640	min: 340, max: 640
Slice thickness	3–4 mm	2–4 mm
Slice gap	0–3 mm	0–3 mm
Repetition time	3500–4900	4200–4899
Echo time	50–80	60–80
Flip angle	60–90	80–90
Contrast-enhanced T1-weighted*		
Field of view	23–25	23–24
Matrix	min: 288, max: 640	min: 384, max: 640
Slice thickness	0.7–4 mm	2–4 mm
Slice gap	0–3 mm	0–3 mm
Repetition time	4.8–9.4 ms	4.3–8 ms
Echo time	2.4–8.0 ms	3.0–7.0 ms
Flip angle	10–90 degrees	70–90 degrees

* For contrast-enhanced scan at both centers, an intravenous bolus injection of 0.1 mmol/kg of body weight gadopentetate dimeglumine was administered at 15 mL/s for post contrast acquisition.

Table E2: List and description of radiomic features used in the study. Detailed description and formulation of the features are documented in <http://pyradiomics.readthedocs.io/en/latest/features.html>

Feature Categories	Feature Type	Extraction Parameters	Feature Name	Feature Description
Shape* ($n = 5$)	N/A	N/A	Voxel volume, Surface area, Surface to volume ratio, Sphericity, Maximum 3D diameter	Mathematical description of the morphology of the tumor
First-order ($n = 11$)	N/A	Normalization [‡] : mean $\pm 3\sigma$	Energy, Entropy, Mean, Median, Range, Mean absolute deviation, Root mean squared, Skewness, Kurtosis, Variance, Uniformity	Statistical description of the intensity histogram of the tumor
Texture ($n = 41$)	GLCM ($n = 20$)	Normalization: mean $\pm 3\sigma$	Autocorrelation, Cluster prominence, Cluster shade, Cluster tendency, Contrast, Correlation, Difference entropy, Difference average, Joint energy, Joint entropy, Inverse difference, Inverse difference moment, Informational measure of correlation 1, Information measure of correlation 2, Inverse difference moment normalized, Inverse difference normalized, Inverse variance, Maximum probability, Sum entropy, Sum Squares	Statistical description of the probability of occurrence of a pair of voxels and their respective gray level.
		Intensity scale [§] = 100		
		Step size = 1		
		Bin-width = 5		
	GLRLM ($n = 16$)	Normalization: mean $\pm 3\sigma$	Gray level nonuniformity, Gray level nonuniformity normalized, Gray level variance, High gray level run emphasis, Long run high gray level emphasis,	Statistical description of the probability of a consecutive run of voxels with the same gray level.
		Intensity scale = 100		
		Bin-width = 5		

			Long run low gray level emphasis, Run entropy, Run length nonuniformity, Run length nonuniformity normalized, Run percentage, Run variance, Short run high gray level emphasis, Short run low gray level emphasis	
	NGLDM ($n = 5$)	Normalization: $\text{mean} \pm 3\sigma$	Busyness, Coarseness, Complexity, Contrast, Strength	Statistical description of the probability of differences between the gray level of a center voxel and average gray level of the neighboring voxels.
		Intensity scale = 100		
		Bin-width = 5		
Wavelet [†] ($n = 208$)	N/A	Normalization: $\text{mean} \pm 3\sigma$	First-order and texture features	Texture and first order description of wavelet decompositions of the image.
		Intensity scale = 100		
		Step size = 1		
		Bin-width = 5		

GLCM = Gray level co-occurrence matrix, GLRLM = Gray level run-length matrix, NGLDM = Neighbor gray level difference matrix.

* Shape features were extracted from contrast-enhanced T1-weighted sequences only.

† Four subbands of wavelet decompositions were applied (low-low, low-high, high-low, high-high). For each decomposition, texture and first-order features were extracted.

‡ Intensity normalization where intensities that were three standard deviation away from the mean were removed.

§ Intensity scaling default to 100.

|| Scaling factor used for scaling intensities of the image.

¶ Bin-width used for discretization of intensities. This step is required calculation of texture features.