

## **SUPPLEMENTARY MATERIALS**

**Supplementary Table S1.** Main MRI acquisition parameters

**Supplementary Table S2.** Dice comparison (p-value) between each sequence (Wilcoxon test).

**Supplementary Table S3.** Spatial complementarity: DSC (mean +/- SD) for T1Gado, T2Flair and FET.

**Supplementary Table S4.** Correlation between progression free survival (PFS) and intra-sequence variability: univariate and multivariable analysis using Cox regression.

**Supplementary Figure S1.** Progression-Free Survival curve regarding surgery using Kaplan Meier.

**Supplementary Figure S2.** Overall Survival curve regarding surgery using Kaplan Meier.

**Supplementary Table S1.** Main MRI acquisition parameters

MRI scanner	SIEMENS 1.5 T				GE MEDICAL SYSTEM 1.5			
SEQUENCE	TE (ms)	TR (ms)	MATRIX	SLICE THICKNESS (mm)	TE (ms)	TR (ms)	MATRIX	SLICE THICKNESS
T1 GADOLINIUM	7.1	600	256 x 256	1	16.74	452	256 x 256	1
T2 FLAIR	335	5000	256 x 217	1	137	452	192 x 192	1,6
rCBV	30	1650	128 x 128	5	30	2290	128 x 128	5
DIFFUSION/ADC	95	2800	192 x 192	4	69.7	9645	128 x 128	4
K2	30	1650	128 x 128	5	30	2290	128 x 128	5

Abbreviations: MRI: Magnetic Resonance Imaging, TE: Time of Echo, TR: Time of Repetition, ms: mili-second, rCBV: Relative cerebral blood volume, ADC: Apparent diffusion coefficient

**Supplementary Table S2.** Dice comparison (p-value) between each sequence (Wilcoxon test).

DICE Comparison	T1Gado	T2Flair	T1GadoFlair	T1GadoFlairFET	K2	rCBV	ADC	Diffusion
<b>T1Gado</b>	-							
<b>T2Flair</b>	< 0.0001	-						
<b>T1GadoFlair</b>	0.0001	< 0.0001	-					
<b>T1GadoFlairFET</b>	0.0005	0.0004	0.69	-				
<b>K2</b>	< 0.0001	0.0013	0.0001	< 0.0001	-			
<b>rCBV</b>	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0001	-		
<b>ADC</b>	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.01	-	
<b>Diffusion</b>	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0003	0.92	0.04	-
<b>FET</b>	0.008	0.30	0.32	0.13	0.0001	< 0.0001	< 0.0001	< 0.0001

**Supplementary Table S3.** Spatial complementarity: DSC (mean +/- SD) for T1Gado, T2Flair and FET.

DICE MEAN (STANDARD DEVIATION)				
SEQUENCE	T1GADO	T2FLAIR	FET	T1GadoFlair
T1GadoFlair	0.60 (0.24)	0.91 (0.16)	0.45 (0.17)	-
T1GadoFlairFET	0.52 (0.21)	0.82 (0.21)	0.59 (0.20)	0.89 (0.14)

**Supplementary Table S4.** Correlation between progression free survival (PFS) and intra-sequence variability: univariate and multivariable analysis using Cox regression.

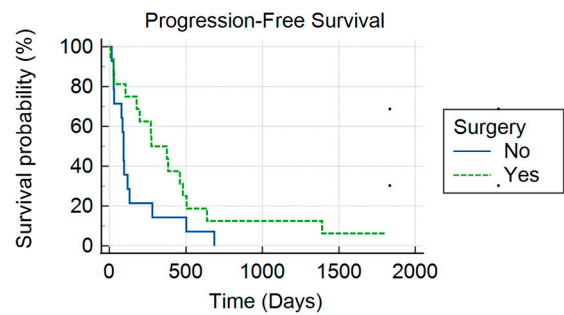
Note. Class (0): 0.00-0.19, Class (1): 0.20-0.39, Class (2): 0.40-0.59, Class (3): 0.60-0.79, Class (4): 0.80-1

Multivariate analysis was conducted but only with preselected significant ( $p < 0.20$ ) variables.

PS: performance status, HR: Hazard Ratio, CI: Confidence Interval, MGMT: O<sup>6</sup>-methylguanine-DNA-methyltransferase, IDH : isocitrate deshydrogenase

	Univariate		Multivariate			
	p	HR	p	HR	CI95% HR	
					Lower	Higher
AGE *	0.97	1				
PS	0.43					
GRADE	0.54	1.40				
SURGERY (ref = no surgery)	0.05	0.47	0.06	0.40	0.15	1.02
IDH (ref = not mutated IDH status	0.22	0.28				
MGMT (ref = not methylated MGMT)	0.05	0.47	0.08	0.43	0.16	1.12
T1GADO	0.25	1.6				
T2FLAIR (ref = class 1)	0.73					
	Class 2	0.5				
	Class 3	0.71				
	Class 4	0.81				
ADC (ref = class 0)	0.69					
	Class 1	0.87				
	Class 2	0.25				
	Class 3	0.82				
K2 (ref = class 0)	0.58					
	Class 1	0.5				
	Class 2	0.4				
	Class 3	0.29				
	Class 4	0.12				
RCBV (ref = Class 0)	0.04		0.09			
	Class 1	0.28	0.13	2.55	0.75	8.66
	Class 2	0.01	0.02	12.90	1.43	116.70
	Class 3	0.05	0.02	9.76	1.53	62.13
DIFFUSION (ref = Class 0)	0.26					
	Class 1	0.65				
	Class 2	0.73				
	Class 3	0.95				
T1GADOFLAIR (ref = Class 2)	0.58					
	Class 3	0.3				
	Class 4	0.5				
T1GADOFLAIRFET (ref = Class 2)	0.96					
	Class 3	0.93				
	Class 4	0.84				
FET (ref = Class 2)	1					
	Class 3	0.92				
	Class 4	0.92				
Vol_RCBV	0.12	1.01	0.29	0.98	0.95	1.02

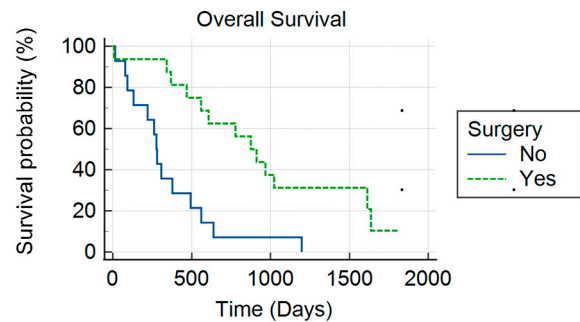
**Supplementary Figure S1.** Progression-Free Survival curve regarding surgery using Kaplan Meier.



Number at risk

Group: No	14	2	0	0	0
Group: Yes	16	4	2	1	0

**Supplementary Figure S2.** Overall Survival curve regarding surgery using Kaplan Meier.  
Time is expressed in days



Number at risk

Group: No	14	3	1	0	0
Group: Yes	16	12	6	3	0