

SUPPLEMENTAL TABLE 1: Correlation of MR CE[†] with FDG uptake by tumor type

Tumor Type	CE [†]						
	No Correlation		Partial Correlation		Near Complete or Complete Correlation		All Patients
	N	Row%	N	Row%	N	Row%	
AA [‡] RR [§]	1	4.3	10	43.5	12	52.2	23
A/AG RR [§]	1	5.6	4	22.2	13	72.2	18
EP [¶] RR [§]	.	.	2	25.0	6	75.0	8
MB [#] RR [§]	.	.	1	14.3	6	85.7	7
BSG ^{**} ND ^{††}	6	21.4	7	25.0	15	53.6	28
BSG ^{**} RR [§]							
(p ^{§§} =0.75)	2	13.3	5	33.3	8	53.3	15
GBM ^{†††} ND ^{††}	7	100.0	7
GBM ^{†††} RR [§]							
(p ^{§§} =NA)	.	.	1	7.1	13	92.9	14
All Patients	10	8.3	30	25.0	80	66.7	120

[†]Contrast data missing for 51 patients.

^{††}Newly diagnosed vs. refractory/recurrent compared using Cochran-Armitage Trend test.

[†]CE=Contrast Enhancement, [‡]AA=Anaplastic

Astrocytoma, [§]RR=Refractory/recurrent, ^{||}A/AG=Astrocytoma/Astrocytic

Glioma, [¶]EP=Ependymoma, [#]MB=Medulloblastoma, ^{**}BSG=Brain Stem Glioma, ^{††}ND=Newly

Diagnosed, ^{††}GBM=Glioblastoma Multiforme, ^{§§}p = p value, ^{||}NA=not available,

SUPPLEMENTAL TABLE 2: Spearman's rank correlations* between MR and FDG-PET variables by tumor types

Spearman Rho*	Diagnosis	Tumor		ADC†
		Volume (cc ³)	CE [§]	
(P‡, N)				
Maximum	AA □ RR¶	0.19(0.42,20)	0.07(0.76,20)	-0.23(0.41,15)
Tumor	A/AG#RR¶	0.27(0.29,17)	0.41(0.12,16)	-0.02(0.93,15)
FDG				
Uptake	BSG**RR¶	0.24(0.43,13)	0.34(0.26,13)	0.26(0.47,10)
/GM ^{§§}	BSG**ND††	0.21(0.20,39)	0.27(0.11,36)	-0.32(0.054,36)
	GBM ^{‡‡} RR¶	0.38(0.22,12)	0.80(0.003,11)	
Mean	AA □ RR¶	0.09(0.72,20)	-0.05(0.82,20)	-0.19(0.50,15)
Tumor	A/AG#RR¶	0.30(0.24,17)	0.48(0.06,16)	-0.12(0.68,15)
FDG				
Uptake	BSG**RR¶	0.04(0.89,13)	0.26(0.39,13)	0.21(0.55,10)
/GM ^{§§}	BSG**ND††	0.14(0.40,39)	0.19(0.26, 36)	-0.27(0.12,36)
	GBM ^{‡‡} RR¶	0.48(0.12,12)	0.72(0.013,11)	
Maximum	AA □ RR¶	0.20(0.40,20)	0.05(0.83,20)	-0.1(0.73,15)
Tumor	A/AG#RR¶	0.09(0.74,17)	0.27(0.31,16)	0.15(0.59,15)
FDG				
Uptake	BSG**RR¶	0.33(0.27,13)	0.32(0.28,13)	0.03(0.93,10)
/WM □ □	BSG**ND††	0.23(0.16,39)	0.26(0.13,36)	-0.48(0.003,36)

Spearman		Tumor		
Rho*	Diagnosis	Volume (cc ³)	CE [§]	ADC [†]
(P [‡] , N)				
	GBM ^{‡‡} RR [¶]	0.51(0.09,12)	0.78(0.0045,11)	
Mean	AA [□] RR [¶]	0.10(0.67,20)	-0.11(0.63,20)	0.01(0.98,15)
Tumor	A/AG [#] RR [¶]	0.00(1.00,17)	0.30(0.26,16)	0.03(0.93,15)
FDG				
Uptake	BSG ^{**} RR [¶]	0.15(0.61,13)	0.52(0.070,13)	-0.01(0.97,10)
/WM ^{□□}	BSG ^{**} ND ^{††}	0.04(0.79,39)	0.45(0.0062,36)	-0.54(0.0007,36)
	GBM ^{‡‡} RR [¶]	0.55(0.063,12)	0.69(0.019,11)	

*Correlation estimates not provided where sample size <10.

†ADC = Apparent Diffusion Coefficient

‡P = p value

§CE=Contrast Enhancement,

□AA=Anaplastic Astrocytoma,

¶RR=Refractory/recurrent, #A/AG=Astrocytoma/Astrocytic Glioma, **BSG=Brain Stem Glioma, ††ND=Newly Diagnosed, ‡‡GBM=Glioblastoma Multiforme, §§GM=Gray Matter, □□WM=White Matter

SUPPLEMENTAL TABLE 3: Cox proportional hazards models of PFS and OS by tumor types*

PET Variables	Diagnosis	PFS*		OS†	
		HR‡(95%CI§)	p-value	HR(95%CI)	p-value
FDG Uptake	BSG RR [¶]	0.79(0.68,82.64)	0.10		
Intensity	BSG ND [#]	1.09(0.53,2.26)	0.81	1.64(0.78,3.43)	0.19
	GBM ^{**} RR [¶]	1.03(0.34,3.1)	0.95		
	AA ^{††} RR [¶]	0.93(0.41,2.12)	0.87	2.28(0.6,8.67)	0.23
	A/AG ^{‡‡} RR [¶]	0.63(0.19,2.1)	0.45		
FDG Uptake	BSG RR [¶]	0.52(0.14,1.98)	0.34		
Uniformity	BSG ND [#]	1.78(0.96,3.28)	0.065	1.59(0.82,3.06)	0.17
	GBM ^{**} RR [¶]	0.8(0.26,2.51)	0.71		
	AA ^{††} RR [¶]	1.5(0.56,3.97)	0.42	1.2(0.23,6.31)	0.83
	A/AG ^{‡‡} RR [¶]	1.51(0.19,12.03)	0.69		
CE ^{§§}	BSG RR [¶]	0.26(0.1,0.71)	0.0081		
	BSG ND [#]	0.99(0.6,1.62)	0.96	1.61(0.92,2.83)	0.094
	GBM ^{**} RR [¶]	0.51(0.06,4.41)	0.54		
	AA ^{††} RR [¶]	1.16(0.6,2.24)	0.67	0.81(0.3,2.22)	0.68
	A/AG ^{‡‡} RR [¶]	1.63(0.44,6.07)	0.47		
Mean Tumor	BSG RR [¶]	1.14(0.09,13.78)	0.92		
FDG Uptake /WM	BSG ND [#]	1.16(0.6,2.24)	0.66	1.38(0.71,2.68)	0.35
	GBM ^{**} RR [¶]	1.12(0.75,1.67)	0.59		
	AA ^{††} RR [¶]	1.04(0.6,1.81)	0.89	1.98(0.79,4.96)	0.14
	A/AG ^{‡‡} RR [¶]	0.86(0.28,2.67)	0.8		
Maximum	BSG RR [¶]	0.65(0.11,3.91)	0.64		
Tumor FDG Uptake	BSG ND [#]	1.52(0.88,2.62)	0.14	1.66(0.94,2.93)	0.079
	GBM ^{**} RR [¶]	1.15(0.85,1.57)	0.37		

/WM	AA ^{††} RR [¶]	1.08(0.7,1.65)	0.73	1.35(0.88,2.08)	0.17
	A/AG ^{‡‡} RR [¶]	0.87(0.31,2.42)	0.79		
Mean Tumor	BSG RR [¶]	1.76(0.06,52.13)	0.74		
FDG Uptake	BSG ND [#]	1.45(0.36,5.91)	0.6	2.45(0.57,10.53)	0.23
/GM ^{¶¶}	GBM ^{**} RR [¶]	1.75(0.76,4.07)	0.19		
	AA ^{††} RR [¶]	1.54(0.47,5.08)	0.48	12.36(1.67,91.64)	0.014
	A/AG ^{‡‡} RR [¶]	0.87(0.11,6.8)	0.89		
Maximum	BSG RR [¶]	1.03(0.06,19.19)	0.98		
Tumor FDG	BSG ND [#]	1.80(0.64,5.09)	0.26	2.75(0.94,7.99)	0.064
Uptake	GBM ^{**} RR [¶]	1.44(0.71,2.92)	0.31		
/GM ^{¶¶}	AA ^{††} RR [¶]	1.25(0.62,2.51)	0.53	1.99(0.93,4.26)	0.077
	A/AG ^{‡‡} RR [¶]	0.86(0.16,4.72)	0.87		

*Association of FDG uptake uniformity, intensity and CE with OS[†] for refractory/recurrent BSG, GBM and astrocytoma/astrocytic glioma could not be calculated due to small number of OS events.

*PFS=Progression-Free Survival, [†]OS=Overall Survival, [‡]HR=Hazards Ratio, [§]CI=Confidence Interval, ^{||}BSG=Brain Stem Glioma, [¶]RR=Refractory/recurrent, [#]ND = Newly Diagnosed, ^{**}GBM=Glioblastoma Multiforme, ^{††}AA=Anaplastic Astrocytoma, ^{‡‡}A/AG=Astrocytoma/Astrocytic Glioma, ^{§§}CE=Contrast Enhancement
^{||}WM=White Matter, ^{¶¶}GM=Gray Matter