

SUPPLEMENTARY MATERIAL

Protocol Number	Gender	Age at diagnosis	Depth most superficial point (cm)	Depth deepest point (cm)	Location	Laterality (L/R)	Eloquent area	Preoperative volume (cm3)	Postoperative volume (cm3)	Percentage volume remaining	Percentage volume resected	US (Y/N)	Recurrence	Consultant	Histology	IDHI	MGMT	p53	ATRX	Ki67	EGFR	Pre-operative PS	Post-operative PS	Peri-operative complications (Y/N)	Complications notes	CRT	Dose/#	Chemo	Overall survival (months)	Progression Free Survival (months)	
1	M	70	0.00	6.10	Supramarginal gyrus	L	Y	179.60	91.61	51.01%	48.99%	Y	N	Other	GBM IV	WT	NOS	NOS	NOS	NOS	Amplification	0	0	N	N/A	Palliative RT	30Gy in 6#	N/A	12	3	
2	M	26	0.70	8.10	Precuneus	R	N	219.80	2.76	1.26%	98.74%	Y	N	C1	GBM IV	M	Unmethylated	NOS	Lost	NOS	No amplification	0	0	N	N/A	Radical CRT	60Gy in 30#	TMZ	20	5	
3	M	38	0.00	6.70	Insula	L	Y	296.30	2.18	0.74%	99.26%	Y	N	C2	GBM IV	WT	Non methylated	NOS	NOS	NOS	NOS	NOS	0	0	N	N/A	Radical CRT	60Gy in 30# (2014) 40Gy in 10# (2015)	TMZ	12	3
4	M	49	0.00	5.20	Superior parietal lobule	R	N	230.10	0.00	0.00%	100.00%	Y	Y	Other	GBM IV	WT	NOS	Retained	<10%	NOS	NOS	0	0	N	N/A	Radical CRT	60Gy in 30# (April 2016) 45Gy in 10# (December 2016)	N/A	17	4	
5	M	61	0.00	4.20	Inferior temporal gyrus	R	N	148.20	1.51	1.02%	98.98%	Y	Y	C3	GBM IV	NOS	NOS	NOS	NOS	NOS	NOS	0	0	N	N/A	Radical CRT	60Gy in 30#	TMZ	Alive	Alive	
6	F	75	0.80	4.70	Inferior temporal gyrus	L	N	75.33	4.52	5.99%	94.01%	Y	N	C1	GBM IV	WT	Unmethylated	NOS	Retained	NOS	NOS	0	0	N	N/A	Radical CRT	60Gy in 30#	TMZ	12	0	
7	M	65	1.20	4.40	Precuneus	R	N	20.46	0.49	2.38%	97.62%	Y	N	C1	GBM IV	WT	Methylated	Overexpressed in 10%	Retained	15%	NOS	0	0	N	N/A	Radical CRT	60Gy in 30#	TMZ	11	6	
8	M	56	0.00	3.40	Superior temporal gyrus	L	Y	136.00	4.15	3.05%	96.95%	Y	N	Other	GBM IV	M	Unmethylated	NOS	Retained	NOS	NOS	0	0	N	N/A	Radical CRT	60Gy in 30#	TMZ	6	3	
9	M	37	1.40	5.10	Insula	L	Y	171.10	4.33	2.53%	97.47%	Y	N	C1	GBM IV	M	Unmethylated	NOS	Lost	NOS	NOS	0	0	N	N/A	Radical CRT	60Gy in 30#	TMZ	20	5	
10	F	44	0.00	7.20	Pre-central gyrus	L	Y	384.00	64.36	16.76%	83.24%	Y	Y	C1	GBM IV (secondary)	WT	Methylated	NOS	Retained	>20%	Amplification	0	0	N	N/A	Radical CRT	60Gy in 10#	TMZ	11	6	
11	F	73	1.03	3.35	Orbital gyrus	R	N	132.20	3.03	2.29%	97.71%	Y	N	C2	GBM IV	WT	Methylated	NOS	Retained	NOS	NOS	0	0	N	N/A	Radical CRT	40Gy in 10#	TMZ	30	28	
12	M	73	0.50	4.30	Precuneus	R	N	62.42	3.13	5.02%	94.98%	Y	N	C1	GBM IV	M	Unmethylated	NOS	NOS	NOS	NOS	Amplification	0	0	N	N/A	Palliative CRT	30Gy in 6#	TMZ	11	6
13	M	84	1.60	5.50	Inferior temporal gyrus	R	N	99.76	1.67	1.68%	98.32%	Y	N	C1	GBM IV	WT	Unmethylated	NOS	NOS	NOS	NOS	No amplification	0	0	N	N/A	N/A	N/A	N/A	11	6
14	M	58	0.80	6.10	Middle temporal gyrus	L	N	180.70	0.96	0.53%	99.47%	Y	N	C1	GBM IV	WT	Unmethylated	NOS	NOS	NOS	NOS	No amplification	0	0	N	N/A	Radical CRT	60Gy in 30# (2014) 40Gy in 10# (2015)	TMZ	12	6
15	M	71	0.00	4.10	Inferior temporal gyrus	L	N	67.83	0.00	0.00%	100.00%	Y	N	C1	GBM IV	WT	Unmethylated	Positive	NOS	NOS	NOS	NOS	0	0	N	N/A	Palliative RT	45Gy in 15#	TMZ	11	6
16	M	64	1.80	6.90	Ventricular trigone	R	N	123.50	13.63	11.04%	88.96%	Y	N	C2	GBM IV	WT	Methylated	NOS	NOS	NOS	NOS	0	4	Y	marked cognitive deficit post-operatively	N/A	N/A	N/A	2	2	
17	M	69	2.20	4.40	Ventricular trigone	L	N	24.03	2.04	8.48%	91.52%	Y	N	C3	GBM IV	WT	Unmethylated	Negative	NOS	NOS	NOS	NOS	0	0	N	N/A	Radical CRT	60Gy in 30#	TMZ	30	28
18	F	50	1.10	5.20	Inferior temporal gyrus	R	N	65.56	7.93	12.09%	87.91%	Y	Y	C2	GBM IV	WT	Unmethylated	NOS	NOS	NOS	NOS	0	0	N	N/A	Palliative RT	24Gy in 10#	Lomustine 100mg/m2	12	3	
19	M	58	1.00	5.40	Superior frontal gyrus	R	N	62.52	1.17	1.87%	98.13%	Y	Y	C1	GBM IV	NOS	Methylated	NOS	NOS	NOS	NOS	NOS	0	0	N	N/A	Palliative RT	45Gy in 10#	N/A	11	6
20	F	48	0.00	5.70	Middle temporal gyrus	R	N	71.70	8.43	11.76%	88.24%	Y	Y	C1	GBM IV	NOS	NOS	NOS	NOS	NOS	NOS	NOS	0	0	N	N/A	Palliative RT	40Gy in 10#	N/A	20	3
21	M	64	2.00	7.20	Ventricular trigone	R	N	115.80	0.00	0.00%	100.00%	Y	N	C1	GBM IV	WT	NOS	NOS	NOS	NOS	NOS	NOS	0	0	N	N/A	N/A	N/A	11	6	
22	F	79	0.00	2.50	Supramarginal gyrus	R	N	26.07	0.34	1.29%	98.71%	Y	N	C1	GBM IV	WT	Methylated	NOS	NOS	NOS	NOS	0	4	N	marked cognitive deficit post-operatively	Palliative RT	45Gy in 15#	N/A	7	5	
23	M	52	1.70	6.40	Cingulate gyrus	R	N	77.33	15.14	19.58%	80.42%	Y	N	Other	GBM IV	WT	Unmethylated	NOS	NOS	NOS	NOS	0	0	N	N/A	Palliative RT	30Gy in 6#	N/A	11	6	
24	F	35	0.00	5.00	Middle temporal gyrus	R	N	188.30	27.41	14.56%	85.44%	Y	Y	DP	GBM IV	M	Unmethylated	NOS	Lost	NOS	NOS	0	0	N	N/A	Radical CRT	60Gy in 30#	TMZ	12	3	
25	M	34	2.40	4.70	Insula	L	Y	18.69	1.67	8.91%	91.09%	Y	N	Other	GBM IV	M	Unmethylated	NOS	Lost	NOS	NOS	0	0	N	N/A	Radical CRT	60Gy in 30#	TMZ	30	28	
26	M	73	2.40	6.00	Isthmus	L	N	62.71	2.59	4.13%	95.87%	Y	N	C1	GBM IV	WT	Unmethylated	NOS	Retained	NOS	NOS	0	0	N	N/A	Radical CRT	60Gy in 30#	TMZ	30	28	
27	M	64	0.50	5.20	Supramarginal gyrus	R	N	167.60	11.27	6.72%	93.28%	Y	N	Other	GBM IV	WT	Methylated	NOS	Retained	NOS	NOS	0	0	N	N/A	Palliative RT	45Gy in 15#	N/A	11	6	
28	M	66	1.70	6.40	Cingulate gyrus	L	N	48.67	11.48	23.59%	76.41%	Y	N	C1	GBM IV	WT	Unmethylated	NOS	Retained	Increased	NOS	No amplification	0	1	N	N/A	Radical CRT	60Gy in 30#	TMZ	18	15
29	M	43	0.20	4.20	Middle frontal gyrus	R	N	41.00	0.00	68.22%	100.00%	Y	N	C1	GBM IV	WT	Unmethylated	NOS	Retained	30%	Amplification	0	0	N	N/A	Radical CRT	60Gy in 30# (2017) 35Gy in 10# (2018)	TMZ	23	12	
30	M	58	2.50	6.70	Hippocampus	R	N	48.43	3.05	6.30%	93.70%	Y	N	C1	GBM IV	WT	NOS	NOS	NOS	NOS	NOS	0	0	N	N/A	Radical CRT	60Gy in 30#	TMZ	18.50	4	
31	M	37	2.00	5.00	Ventricular trigone	L	N	4.94	2.02	40.89%	59.11%	N	N	C1	GBM IV	WT	unmethylated	NOS	NOS	NOS	NOS	0	0	N	N/A	Radical CRT	60Gy in 30# (2014)	TMZ	19	4	
32	M	45	2.20	5.00	Hippocampus	L	N	6.48	3.03	46.76%	53.24%	N	N	C2	GBM IV	WT	unmethylated	NOS	NOS	NOS	NOS	Amplification	0	0	N	N/A	Radical CRT	60Gy in 30#	Bevacizumab + Lomustine	12	7
33	M	61	0.00	3.00	Inferior temporal gyrus	R	N	41.50	0.00	0.00%	100.00%	N	N	C3	GBM IV	WT	methylated 5%	NOS	NOS	NOS	NOS	0	0	N	N/A	Radical CRT	60Gy in 30#	TMZ	28	28	
34	M	28	1.00	7.80	Paraterminal gyrus	L	N	104.40	25.11	24.05%	75.95%	N	N	C2	GBM IV	M	NOS	NOS	Lost	>90%	No amplification	1	3	N	N/A	Radical CRT	60Gy in 30#	TMZ	22	13	
35	F	68	0.00	4.59	Occipital	L	Y	91.14	13.18	14.46%	85.54%	N	N	C2	GBM IV	WT	unmethylated	NOS	Retained	NOS	NOS	1	3	N	N/A	Palliative RT	30Gy in 6#	TMZ	29	3	
36	M	69	0.00	3.50	Superior frontal gyrus	R	N	31.13	2.80	8.99%	91.01%	N	N	C3	GBM IV	NOS	NOS	NOS	NOS	NOS	NOS	0	0	N	N/A	Radical CRT	60Gy in 30# (2014)	TMZ	13	3	
37	M	43	0.00	5.80	Orbital gyrus	L	N	51.65	10.85	21.01%	78.99%	N	N	C2	GBM IV	WT	methylated 10%	NOS	Retained	NOS	NOS	1	1	N	N/A	Radical CRT	60Gy in 30#	N/A	16	3	
38	M	69	1.40	5.00	Hippocampus	R	N	59.82	22.57	37.73%	62.27%	N	N	C2	GBM IV	WT	unmethylated	NOS	NOS	NOS	NOS	0	1	Y	Aspiration pneumonia, hydrocephalus	Radical CRT	58Gy in 29# 30Gy in 6#	TMZ	8.5	8.5	
39	M	56	1.50	7.00	Paraterminal gyrus	R	N	81.63	8.15	9.98%	90.02%	N	N	C2	GBM IV	NOS	NOS	NOS	NOS	NOS	NOS	0	3	N	N/A	Palliative RT	30Gy in 6#	Procarbazine + Lomustine	15	5	
40	F	74	1.60	7.40	Ventricular trigon	L	N	103.80	20.71	19.95%	80.05%	N	N	C2	GBM IV	WT	unmethylated	NOS	Retained	NOS	NOS	1	2	Y	Hydrocephalus	Radical CRT	N/A	N/A	3	1	
41	M	50	0.50	4.20	Middle temporal gyrus	L	N	35.70	7.97	23.65%	76.35%	N	N	Other	GBM IV	NOS	NOS	NOS	NOS	NOS	NOS	0	0	N	N/A	Palliative RT	60Gy in 30#	N/A	6	6	
42	F	80	0.00	2.60	Inferior parietal lobule	R	N	17.92	7.82	43.61%	56.39%	N	N	C2	GBM IV	WT	NOS	NOS	Retained	NOS	NOS	1	1	N	N/A	Palliative RT	30Gy in 6#	N/A	9	9	
43	M	47	0.00	4.20	Inferior parietal lobule	L	Y	71.71	1.26	1.76%	98.24%	N	Y	C2	GBM IV	WT	unmethylated	NOS	Retained	NOS	NOS	1	0	N	N/A	Radical CRT	60Gy in 30# (2015)	TMZ	17	14	
44	F	28	0.80	8.30	Inferior parietal lobule	L	Y	139.00	13.00	9.35%	90.65%	N	N	C2	GBM IV	WT	unmethylated	NOS	Retained	NOS	NOS	0	1	N	N/A	Radical CRT	60Gy in 30# (2015)	TMZ	17	9	
45	F	62	0.20	4.20	Superior temporal gyrus	L	Y	42.96	0.45	1.06%	98.94%	N	N	C2	GBM IV	WT	methylated 5%	NOS	Retained	NOS	NOS	0	0	N	N/A	Radical CRT	60Gy in 30# (2016)	TMZ	32	18	
46</																															