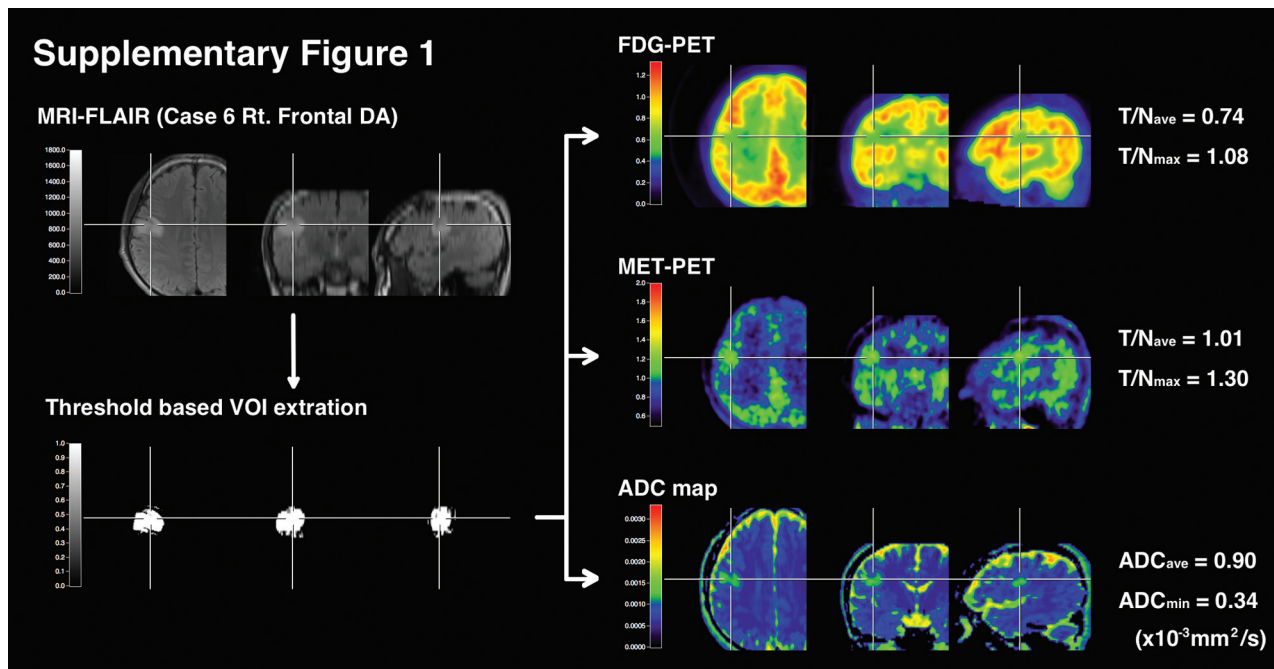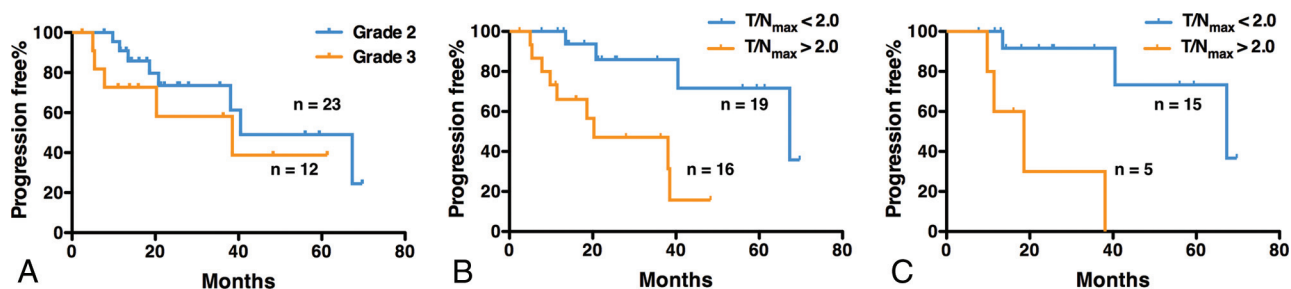**On-line Table 1: Patient characteristics**

Patient No.	Age at Surgery (yr)	Sex	Histologic Diagnosis	WHO Grade	Tumor Location	Type of Surgery	Adjuvant Therapy	DTI	Tumor Progression	Follow-Up Period or PFS (mo)
1	11	M	DA	II	L frontal	TR	−	+	−	14
2	15	F	DA	II	R thalamus	PR	−	−	−	11
3	25	M	DA	II	L temporal	PR	−	+	+	7
4	25	F	DA	II	L insula	PR	−	+	−	58
5	25	M	DA	II	L temporal	PR	−	+	+	12
6	26	M	DA	II	R frontal	PR	−	+	−	50
7	28	M	DA	II	L temporal	PR	−	+	+	19
8	30	F	DA	II	L temporal	PR	RT	+	−	28
9	31	M	DA	II	R insula	TR	−	+	−	21
10	39	M	DA	II	R insula	PR	−	−	−	38
11	41	M	DA	II	L temporal	TR	−	+	+	64
12	41	F	DA	II	L frontal	TR	−	+	−	10
13	42	F	DA	II	L frontal	TR	−	+	−	24
14	43	F	DA	II	L insula	TR	−	+	−	24
15	43	M	DA	II	R temporal	PR	−	+	+	37
16	50	F	DA	II	L thalamus	B	−	+	−	58
17	59	F	DA	II	L frontal	PR	−	+	+	7
18	65	F	DA	II	R insula	PR	RT + TMZ	+	−	21
19	67	M	DA	II	L insula-temporal	PR	−	+	−	12
20	33	M	OA	II	L frontal	PR	−	+	+	34
21	36	M	OA	II	R frontal	TR	−	+	-	12
22	35	M	O	II	R basal ganglia	PR	RT + TMZ	+	+	21
23	40	M	O	II	R frontal	TR	−	+	−	4
24	19	F	AA	III	L thalamus	B	RT + TMZ	+	−	61
25	28	F	AA	III	L frontal	TR	RT + TMZ	+	+	5
26	29	M	AA	III	R thalamus	PR	RT + TMZ	+	+	7
27	31	F	AA	III	Bilateral frontal	PR	RT + TMZ	+	+	19
28	48	M	AA	III	L insula-thalamus	PR	RT + TMZ	+	−	48
29	58	F	AA	III	L temporal	PR	RT + TMZ	−	−	2
30	62	F	AA	III	L temporal	PR	RT + TMZ	+	−	11
31	67	F	AA	III	L thalamus	B	RT + TMZ	+	+	1
32	76	M	AA	III	L parietal	PR	TMZ	+	+	36
33	29	F	AOA	III	L insula	TR	RT + TMZ	−	−	11
34	39	F	AOA	III	R frontal insula-temporal	PR	RT + PAV	+	−	15
35	59	M	AOA	III	R frontal	TR	RT + TMZ	+	−	36

Note:—WHO indicates World Health Organization; DA, diffuse astrocytoma; OA, oligoastrocytoma; O, oligodendroglioma; AA, anaplastic astrocytoma; AOA, anaplastic oligoastrocytoma; L, left; R, right; TR, total resection (>95%); PR, partial resection; B, biopsy; RT, radiotherapy; TMZ, temozolomide, PAV, procarbazine + adjuvant chemotherapy with nimustine + vincristine.

ON-LINE FIG 1. Case presentation of the image-analysis process. A 26-year-old man with a right frontal lobe diffuse astrocytoma (World Health Organization grade II). All the images were coregistered by using VINCI image-analysis software, and high-intensity lesions on T2/FLAIR imaging were semiautomatically segmented in 3D by image-intensity threshold. The segmented voxels of interest were applied to registered PET images and ADC maps, followed by calculation of the average and maximum or minimal values of each parameter within the VOI.

ON-LINE FIG 2. Progression-free survival analysis by tumor grade and MET PET results. Progression-free survival from the date when PET images were obtained to the date of tumor progression is shown in Kaplan-Meier curves according to tumor grade (*A*). Patients with T/N$_{max}$ of <2.0 showed prolonged progression-free survival compared with those with T/N$_{max}$ of >2.0 (*B*, *P* = .004). This was also true when the analysis was restricted to patients who received no adjuvant therapy (*C*, *P* = .004).

On-line Table 2: Survival analysis based on PET tracer uptakes

Patient Grouping	Imaging Parameters		Cutoff Value	Progression-Free Survival (Median and 95% CI in mo)		P Value in Log-Rank
				Lower Than Cutoff	Higher Than Cutoff	
All patients	FDG	T/N_{ave}	0.611	20.6 (7.4–N/D)	64.2 (34.0–64.2)	.47
		T/N_{max}	1.54	37.0 (18.8–N/D)	64.2 (N/D–N/D)	.28
	MET	T/N_{ave}	1.1	64.2 (20.6–64.2)	36.3 (18.6–N/D)	.12
		T/N_{max}	2.01	64.2 (34–64.2)	18.8 (7.4–37.0)	.006[a]
Patients without adjuvant therapy	FDG	T/N_{ave}	0.611	18.6 (7.4—N/D)	64.2 (34.0–64.2)	.26
		T/N_{max}	1.54	37.0 (18.6–N/D)	64.2 (N/D–N/D)	.32
	MET	T/N_{ave}	1.1	64.2 (12.1–64.2)	37.0 (7.4–37)	.06
		T/N_{max}	2.01	64.2 (34–64.2)	18.6 (7.4–37.0)	.004[a]
Patients with adjuvant therapy	FDG	T/N_{ave}	0.611	N/D (20.6–N/D)	36.3 (4.5–N/D)	.99
		T/N_{max}	1.54	36.3 (7.2–N/D)	N/D	N/D
	MET	T/N_{ave}	1.1	N/D (20.6–N/D)	36.3 (4.5–N/D)	.99
		T/N_{max}	2.01	N/D (20.6–N/D)	36.3 (7.2–N/D)	.37
Patients with grade II glioma	FDG	T/N_{ave}	0.611	20.6 (7.4–N/D)	64.2 (34.0–64.2)	.15
		T/N_{max}	1.54	37.0 (18.6–N/D)	64.2 (N/D–N/D)	.30
	MET	T/N_{ave}	1.1	64.2 (20.6–64.2)	37.0 (7.4–37.0)	.14
		T/N_{max}	2.01	64.2 (20.6–64.2)	18.6 (7.4–37.0)	.016[a]
Patients with grade III glioma	FDG	T/N_{ave}	0.611	N/D	36.3 (4.5–N/D)	N/D
		T/N_{max}	1.54	36.3 (4.5–N/D)	N/D	N/D
	MET	T/N_{ave}	1.1	N/D	36.3 (4.5–N/D)	N/D
		T/N_{max}	2.01	N/D	36.3 (1.4–N/D)	.22

Note:—N/D indicates not detected.

[a] $P < .05$.