On-line Table 1: Check points of quality assessment in this study

Category	Check Point	Score (0–2)
Scientific design[a]	1) Study objective definition	
	2) Study design: prospective (2 points), retrospective (1 point), not defined (0 points)	
	3) Outcome definition	
	4) Statistical considerations (fully reported with a preliminary assessment of the patient/sample number to be included and/or analyzed [2 points]; patient/sample number to be included and/or analyzed justified by the number of studied variables [minimum 10 patients per variable] [1 point]; not defined [0 points])	
	5) Statistical methods and test description	
Generalizability[a]	1) Patient selection criteria, including histologic type, disease stage, and treatment	
	2) Patient characteristics, including histology type, disease stage, and treatment	
	3) Initial work-up	
	4) Treatment description	
	5) Number of ineligible patients with exclusion causes	
Results analysis[a]	1) Follow-up description, including the number of events	
	2) Survival analysis according to the tumor-to-normal cortex ratio and/or metabolic tumor volume	
	3) Univariate analysis of the prognostic factors for survival: report of the relative risk with the confidence interval (2 points), results without evaluation of the relative risk and its confidence interval (1 point), not reported or inadequate (0 points)	
	4) Multivariate analysis of the prognostic factors for survival: report the relative risk with the confidence interval (2 points), results without evaluation of the relative risk and its confidence interval (1 point), not reported or inadequate (0 points)	
	5) The analysis of the relationship between TNR and/or MTV was performed without knowledge of survival results and conversely (double blind)	
PET report[a]	1) Patient characteristics: weight/height, blood sugar level, histologic subtype	
	2) MET PET acquisition protocol characteristics: fasting duration, injected dose of MET, delay between injection and data acquisition	
	3) Technical parameters: investigation area, delay between CT and PET acquisition, standard uptake value formula, type of SUV, TNR and/or MTV formula; type of PET engine, duration of emission time; duration of transmission time, attenuation and reconstruction parameters	
	4) TNR and/or MTV cutoff definition	

Note:—MET indicates ^{11}C-methionine.

[a] Score of 10.

No.	Study	Year	Country	Patient No.	Glioma Grade	Treatment before MET PET	Major Treatment after MET PET	End Point	PET Parameters	Tumor Parameter	Reference Parameter	Cutoffs of TNR	Cutoffs of MTV (cm³)
1	Kaschten et al[24]	1998	Belgium	41	Low–high	None	Operation (± radiotherapy)	OS	TNR	SUVmax	SUVmean	2.1	(–)
2	Ribom et al[25]	2001	Sweden	68	Low	None	Operation and/or radiotherapy	OS	TNR	SUVmax	SUVmean	2.0 and 2.2	(–)
3	de Witte et al[26]	2001	Belgium	85	Low–high	None or operation with radiotherapy	Operation and/or radiotherapy	OS	TNR	SUVmax	SUVmean	2.2 and 2.8	(–)
4	Nariai et al[28]	2005	Japan	65	Low–high	None	Unknown	OS	TNR	SUVmax	Not definite	1.706	(–)
5	Van Laere et al[27]	2005	Belgium	30	Low–high	Operation and/or radiotherapy and/or chemotherapy	Operation and/or radiotherapy and/or chemotherapy	OS	TNR	SUVmax	SUVmean	2.0	(–)
6	Ribom et al[29]	2005	Sweden	27	Low	None	Operation	EFS	TNR	SUVmax	Not definite	2.0 and 2.2	(–)
7	Galldiks et al[30]	2006	Germany	15	High	None	Chemotherapy	EFS and OS	TNR	SUVmax	SUVmean	1.8	(–)
8	Smits et al[31]	2008	Sweden	129	Low	None	Operation (± radiotherapy and/or chemotherapy)	OS	TNR	SUVmax	SUVmean	2.1	(–)
9	Galldiks et al[32]	2012	Germany	40	High	None	Unknown	EFS and OS	TNR and MTV	SUVmax	SUVmean	2.6	43
10	Singhal et al[33]	2012	United States	102	Low–high	None	Unknown	OS	TNR	SUVmean	SUVmean	1.51	(–)
11	Kobayashi et al[34]	2015	Japan	33	Low–high	None	Operation (± CCRT)	OS	TNR and MTV	SUVmax	SUVmean	3.42	59.95
12	Yoo et al[35]	2015	South Korea	30	High	None	Operation and following CCRT	EFS	TNR and MTV	SUVmax	SUVmean	3.3	35
13	Takano et al[36]	2016	Japan	35	Low–high	None	Operation (± radiotherapy or chemotherapy or CCRT)	EFS	TNR	SUVmax	SUVmax	2.0	(–)
14	Jung et al[37]	2017	South Korea	35	High	Operation (± CCRT or radiotherapy)	Unknown	OS	TNR and MTV	SUVmax	SUVmax	2.8	60

Note:—CCRT indicates concurrent chemoradiation therapy; (–), value not provided; MET, ^{11}C–methionine.

On-line Table 3: Quality assessment of included studies

No.	Author	Global Score (%)	Scientific Design[a]	Generalizability[a]	Results Analysis[a]	PET Report[a]
1	Kaschten et al[24]	50	4	7	4	5
2	Ribom et al[25]	70	8	7	8	5
3	de Witte et al[26]	43.8	4	7	4	2.5
4	Nariai et al[28]	41.9	6	4	3	3.8
5	Van Laere et al[27]	66.9	5	7	6	8.8
6	Ribom et al[29]	57.5	6	7	5	5
7	Galldiks et al[30]	60	7	7	5	5
8	Smits et al[31]	62.5	8	7	5	5
9	Galldiks et al[32]	55.6	7	4	5	6.3
10	Singhal et al[33]	53.8	6	4	4	7.5
11	Kobayashi et al[34]	58.1	5	7	5	6.3
12	Yoo et al[35]	71.3	7	7	7	7.5
13	Takano et al[36]	63.8	7	7	4	7.5
14	Jung et al[37]	56.3	5	4	6	7.5

[a] Score of 10.

On-line Table 4: Summary of direct comparison studies between TNR and MTV

Author	Year	No.	End Point	Tumor Grade	Tumor Stage	Reference for TNR	Significance of TNR	Reference for MTV	Significance of MTV
Galldiks et al[32]	2012	40	EFS and OS	High	Primary	SUVmean of normal contralateral cortex	Not significant for both EFS and OS	1.3 × SUVmean of normal contralateral cortex	Significant for both EFS and OS
Kobayashi et al[34]	2015	33	OS	Low–high	Primary	SUVmean of normal contralateral cortex	Not significant for OS	1.3 × SUVmean of normal contralateral cortex	Significant for OS
Yoo et al[35]	2015	30	EFS	High	Primary	SUVmean of normal contralateral cortex	Not significant for EFS	1.3 × SUVmean of normal contralateral cortex	Significant for EFS
Jung et al[37]	2017	35	OS	High	Recurrence	SUVmax of normal contralateral cortex	Not significant for OS	SUVmax of normal contralateral cortex	Significant for OS