

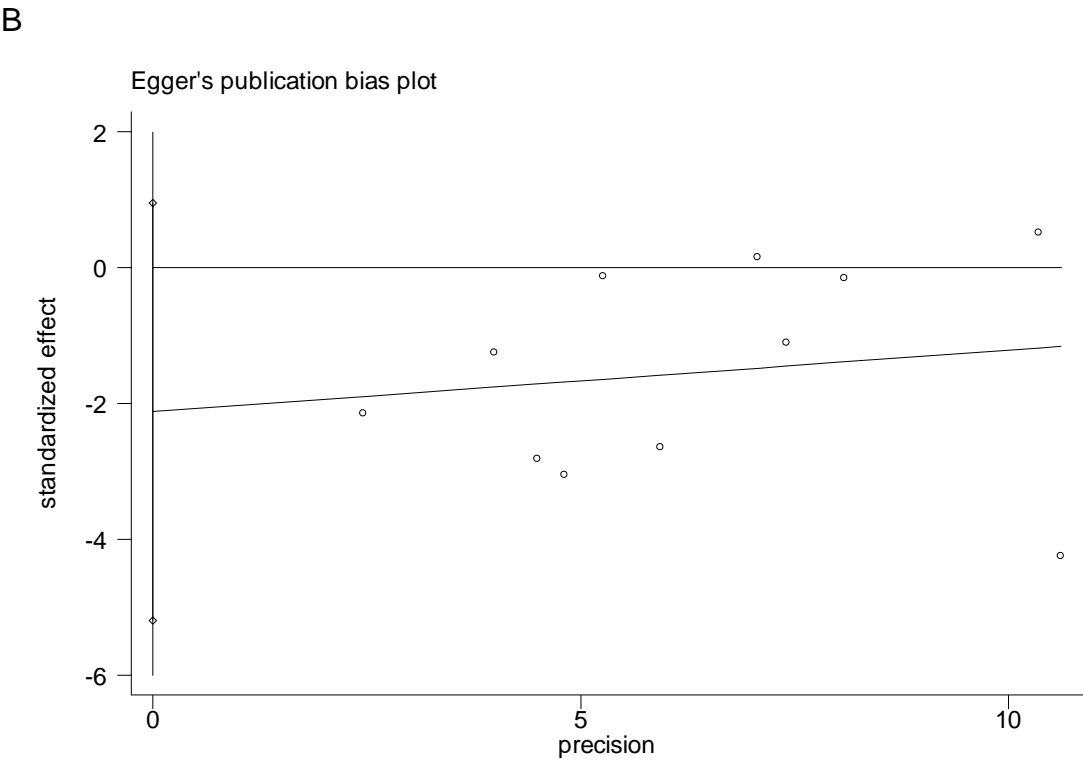
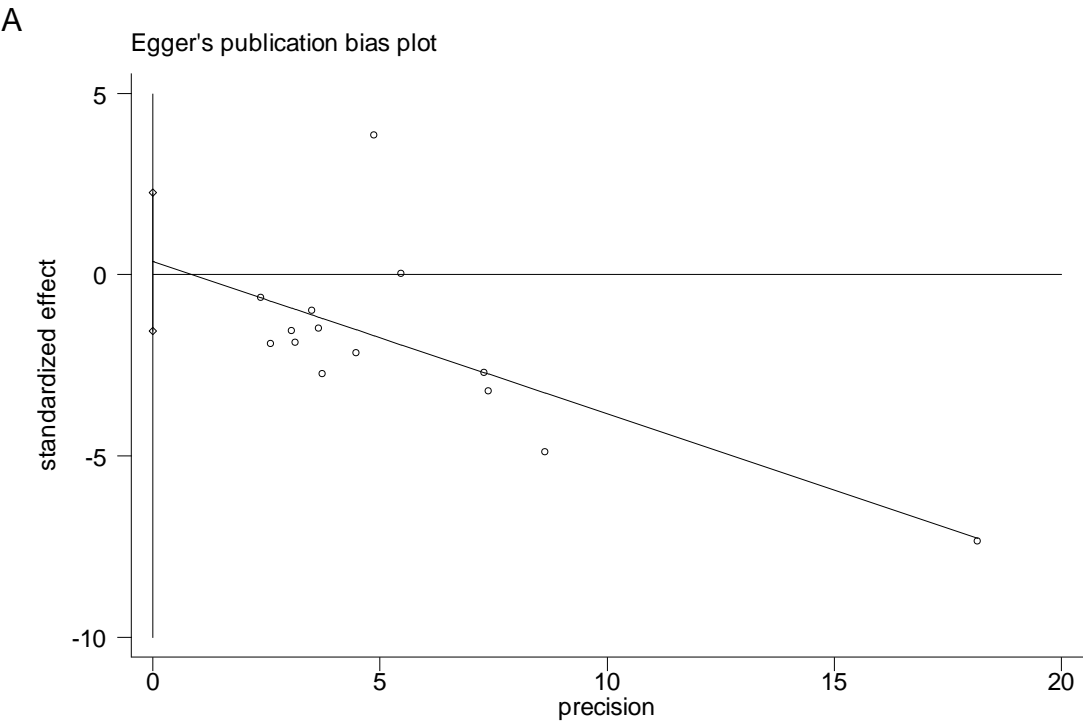
Supplemental information

Supplemental Table S1 Quality assessment of included studies using the New-castle–Ottawa Scale for cohort studies

Study	Selections				Comparability	Outcome			Score
	A	B	C	D		F	G	H	
Azoulay et al., 2017	1	1	1		1	1	1	1	7
Boiardi et al., 2008	1	1			2	1	1		6
Chaichana et al., 2013	1	1	1		1	1	1	1	7
Chen et al., 2018	1	1	1		1	1	1		6
Clarke et al., 2011	1	1	1		1	1	1		6
Delgado-Fernandez et al., 2017	1	1	1		1	1	1	1	7
Filippini et al., 2008 (I)	1	1	1		2	1	1	1	8
Filippini et al., 2008 (II)	1	1	1		2	1	1	1	8
Goldman et al., 2018	1	1	1		2	1	1	1	8
Nava et al., 2014 (I)	1	1	1	1	2	1	1	1	9
Nava et al., 2014 (II)	1	1	1	1	2	1	1	1	9
Ortega et al., 2016	1	1	1		1	1	1		6
Skeie et al., 2012	1	1	1		2	1	1	1	8
Suchorska et al., 2016	1	1	1	1	1	1	1	1	8
Tully et al., 2016	1	1	1		1	1	1	1	7
Tugcu et al., 2010	1	1	1		1	1	1	1	7
Woernle et al., 2015	1	1	1		1	1	1		6
Zanello et al., 2017	1	1	1		1	1	1	1	7
Kim et al., 2015	1	1	1		2	1	1	1	8
Stark et al., 2007	1	1	1		1	1	1		6
McGirt et al., 2009	1	1	1		2	1	1		7
Sastry et al., 2018	1	1	1		2	1	1	1	8
Wann et al., 2018	1	1	1		1	1	1		6

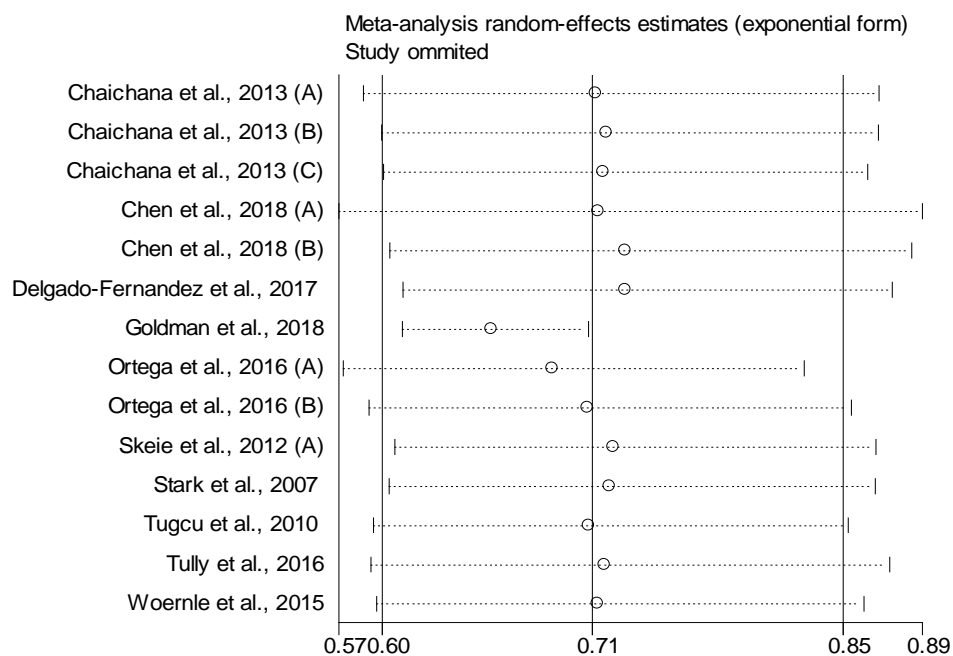
A, representativeness of the exposed cohort: highly representative or somewhat representative (one star); no description (no score). B, selection of the non-exposed cohort: patients drawn from the same community as the exposed cohort (one score); patients drawn from a different source or no description (no score). C, ascertainment of exposure: information collected from secure record or structured interview (one score); no description (no score). D, demonstration that outcome of interest was not present at start of study: yes (one score), no (no score). E, comparability of cohorts on the basis of the design or analysis: study controls for important factor, time to recurrence, *MGMT* promoter status/*IDH1* mutation, initial extent of resection, age, treatment (two scores: time to recurrence is essential, at least other 3 factor was included, one star: time to recurrence was ignored, and some of them were included.). F, assessment of out-come: independent blind assessment or record linkage (one score); self-report or no description (no star). G, follow-up long enough for outcomes to occur: yes (one score); no (no score). H, adequacy of follow-up of cohorts: complete follow-up (one score); follow-up rate\80% and no description of those lost (no score); no statement (no score).

Supplemental Figure S1 Egger's test to evaluate the publication bias for overall survival (A) and post-progression survival (B).

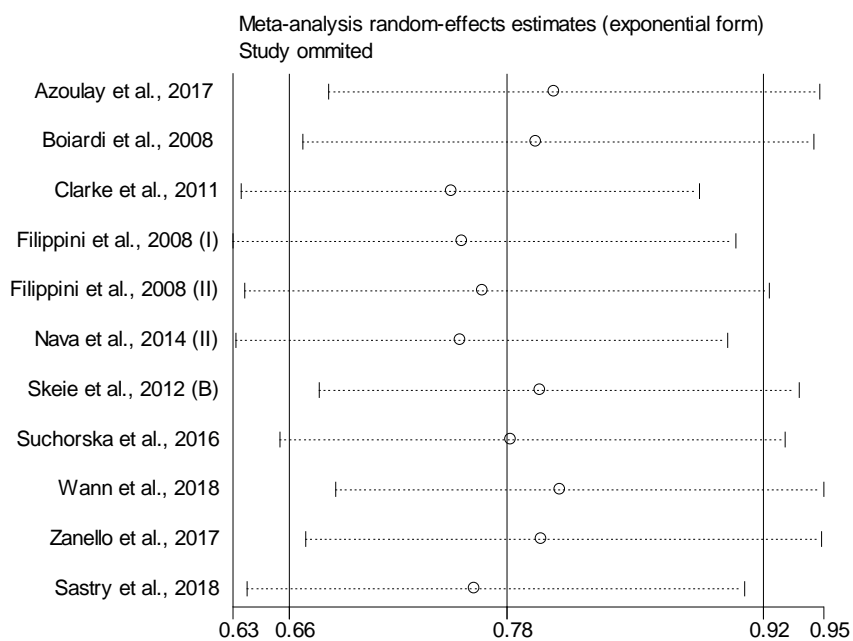


Supplemental Figure S2 Sensitivity analysis for overall survival (A) and post-progression survival (B).

A



B



Supplemental Figure S3 Forest plots for hazard ratios comparing OS in patients who underwent one reoperation vs multiple reoperation.

