Supplementary

Search strategies

Search date was from the inception through March 1st, 2020.

PubMed search strategy

((“Nivolumab”[Substance] OR “Nivolumab”[All Fields] OR “Opdivo”[All Fields] OR “BMS-936558”[All Fields]) OR (“Pembrolizumab”[Substance] OR “Pembrolizumab”[All Fields] OR “lambrolizumab”[All Fields] OR “keytruda”[All Fields] OR “MK-3475”[All Fields]) OR (“Atezolizumab”[Substance] OR “Atezolizumab”[All Fields] OR “Tecentriq”[All Fields] OR “MPDL3280A”[All Fields]) OR (“Durvalumab”[Substance] OR “Durvalumab”[All Fields]) OR (“Avelumab”[Substance] OR “Avelumab”[All Fields]) OR (“Camrelizumab”[All Fields] OR “SHR-1210”[All Fields]) OR (“Sintilimab”[All Fields] OR “IBI308”[All Fields]) OR (“Toripalimab”[All Fields] OR “JS001”[All Fields]) OR (“PD-1”[All Fields] OR “PD-L1”[All Fields])) AND (“lung neoplasms”[Mesh] OR “lung cancer”[All Fields] OR “lung tumor”[Title/Abstract]) AND (“randomized”[All Fields])

EMBASE search strategy

(‘Nivolumab’ OR ‘Opdivo’ OR ‘BMS-936558’ OR ‘Nivo’ OR ‘Pembrolizumab’ OR ‘lambrolizumab’ OR ‘keytruda’ OR ‘SCH 900475’ OR ‘MK-3475’OR ‘Atezolizumab’ OR ‘MSB0010718C’ OR ‘Tecentriq’ OR ‘RO5541267’ OR ‘RG7446’ OR ‘MPDL3280A’ OR ‘Durvalumab’ OR ‘MEDI-4736’ OR ‘MEDI4736’ OR ‘Avelumab’ OR ‘Camrelizumab’ OR ‘SHR-1210’ OR ‘Sintilimab’ OR ‘IBI308’ OR ‘Toripalimab’ OR ‘JS001’ OR ‘checkpoint inhibit’ OR ‘PD-1’ OR ‘PD-L1’) AND (‘lung neoplasms’ OR ‘lung carcinoma’ OR ‘lung cancer’ OR ‘lung tum’) AND (‘randomized’)

Cochrane database search strategy

(“Nivolumab” OR “Pembrolizumab” OR “Atezolizumab” OR “Avelumab” OR “Durvalumab” OR “Camrelizumab” OR “Sintilimab” OR “Toripalimab” OR “PD-1” OR “PD-L1”) AND (“lung neoplasms” OR “lung cancer” OR “lung tumor”) AND (“randomized”)

http://dx.doi.org/10.21037/tlcr-21-199

Table S1 The methodologic quality assessment for each included study

Trial ID	Random sequence generation	Allocation concealment	Blinding of participants	Blinding of outcome assessment	Incomplete outcome data	Selective outcome reporting	Other potential threats to validity
ARCTIC	Low	Low	Low	Low	Low	Low	Low
CAMEL	Low	Low	Low	Low	Low	Low	Low
CheckMate 017	Low	Low	Low	Low	Low	Low	Low
CheckMate 026	Low	Low	Low	Low	Low	Low	Low
CheckMate 057	Low	Low	Low	Low	Low	Low	Low
CheckMate 227	Low	Low	Low	Low	Low	Low	Low
CheckMate 9LA	Low	Low	Low	Low	Low	Low	Low
EMPOWER-Lung 1	Low	Low	Low	Low	Low	Low	Unknown
IMpower110	Low	Low	Low	Low	Low	Low	Low
IMpower130	Low	Low	Low	Low	Low	Low	Low
IMpower131	Low	Low	Low	Low	Low	Low	Low
IMpower132	Low	Low	Low	Low	Low	Low	Low
IMpower150	Low	Low	Low	Low	Low	Low	Low
JAVELIN Lung 200	Low	Low	Low	Low	Low	Low	Low
KEYNOTE-010	Low	Low	Low	Low	Low	Low	Low
KEYNOTE-021G	Low	Low	Low	Low	Low	Low	Low
KEYNOTE-024	Low	Low	Low	Low	Low	Low	Low
KEYNOTE-033	Low	Unknown	Low	Low	Low	Low	Unknown
KEYNOTE-042	Low	Low	Low	Low	Low	Low	Low
KEYNOTE-189	Low	Low	Low	Low	Low	Low	Low
KEYNOTE-407	Low	Low	Low	Low	Low	Low	Low
MYSTIC	Low	Unknown	Low	Low	Low	Low	Unknown
NA2020	Low	Unknown	Low	Low	Low	Low	Unknown
OAK	Low	Low	Low	Low	Low	Low	Low
ORIENT-11	Low	Low	Low	Low	Low	Low	Low
ORIENT-12	Low	Unknown	Low	Low	Low	Low	Unknown
POPLAR	Low	Low	Low	Low	Low	Low	Low

http://dx.doi.org/10.21037/tlcr-21-199

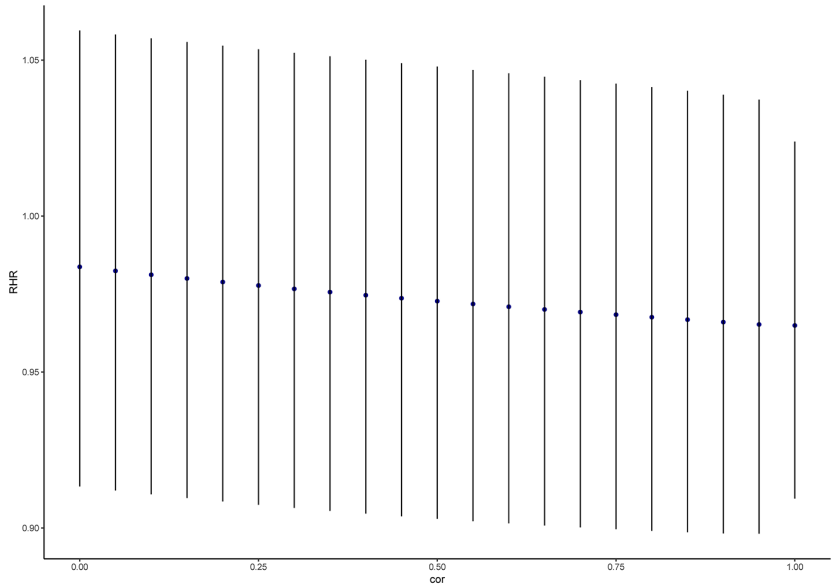

Figure S1 Effect of dependency between OS and PFS. A ratio of hazard ratio (rHR) <1.0 indicates greater treatment effect size for PFS than for OS. A ρ of 0 indicates no dependency and a r of 1.0 indicates complete dependency. With increasing ρ, the variability of within-trial rHRs decreased, which resulted in increased between-trials heterogeneity.

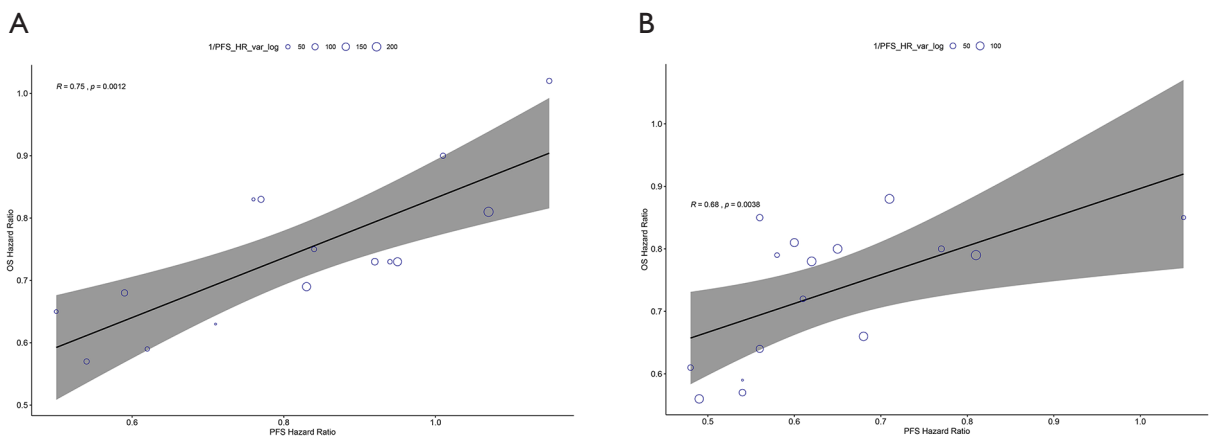

Figure S2 Correlation between OS and PFS according to the treatment patterns. (A) Monotherapy group; (B) combination therapy group. Each circle represents a trial. The size of the circle is proportional to the inverse of the variance. The lines represent 95% prediction intervals for a trial with a median weight.

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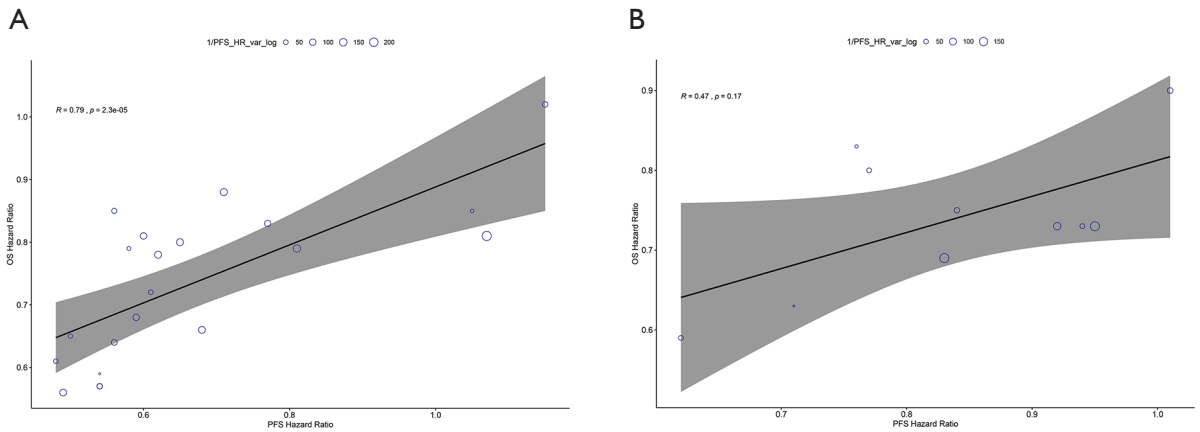

Figure S3 Subgroup analysis of correlation between PFS and OS according to lines of treatment. (A) First-line treatment; (B) second or above-line treatment. Each circle represents a trial. The size of the circle is proportional to the inverse of the variance. The lines represent 95% prediction intervals for a trial with a median weight.

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