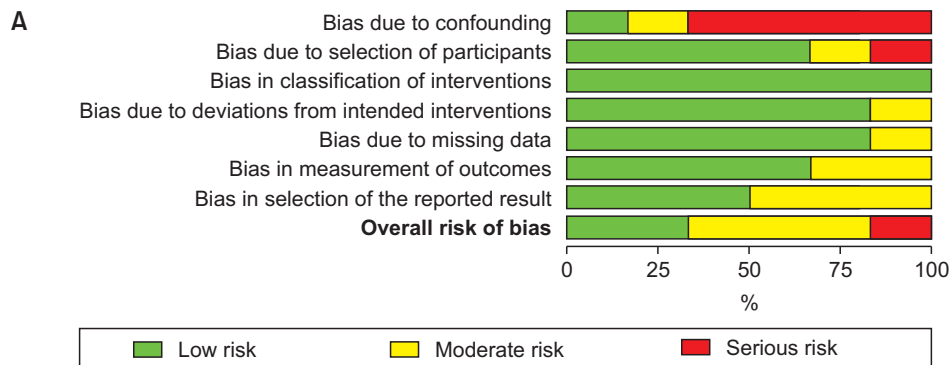


Supplementary Table 1. Baseline characteristics of included studies

	Shmuelli et al. [34], 2002	Lang et al. [35], 2004_LC	Lang et al. [35], 2004_OC	Sheetz et al. [37], 2019	Chen et al. [36], 2020	Wu et al. [38], 2021	Valentiyev et al. [39], 2023
Baseline characteristics	Pre-PPS	Post-PPS	Pre-DRG	Post-DRG	Pre-DRG	Post-DRG	Post-DRG
	849 (yearly)	849 (yearly)	11,507	15,499	9,467	9,542	4,703
							EBP: least expensive surgeons (lowest 25%)
							EBP: average surgeons (middle 50%)
							EBP: most expensive surgeons (highest 25%)
Patient number				4,828	134,788 (for all procedures including cholecystectomy)	91,433 (for all procedures including cholecystectomy)	
Sex (%)							
Male	-	39.9	51.7	-	50.0	51.8	-
Female	-	60.1	48.3	-	50.0	48.3	-
Age (yr)		54.2 ± 14.9	60.9 ± 14.9	-	32.35 ± 17.94	52.5 ± 15.5	-
LOS (day)	12.5 ± 8.3	12.4 ± 12.8	14.8 ± 7.9	-	-	65.4 ± 10.7	-
Mortality (%)	1.10	1.60	0.96	-	-	4.5 ± 3.4	1.6
Readmission (%)	5.20	9.90	-	8.00	11.00	0	0.76
Complications (%)	-	-	-	5.00	7.00	4.39	-
Total charge per patient (\$)	-	2,220.3 ± 1,226.8	2,051.7 ± 918.8	3,391.5 ± 3,282.7	3,675.2 ± 3,494.0	-	-
Average financial margin per patient (\$)	-	-	-	-	-	365.4	827.9

Costs were presented in USD (\$). Values are presented as mean ± standard deviation unless otherwise indicated. LOS, length of stay; PPS, prospective payment system; LC, laparoscopic cholecystectomy; DGR, diagnosis-related group; OC, open cholecystectomy; EBP, episode-based payment; -, not available.



B

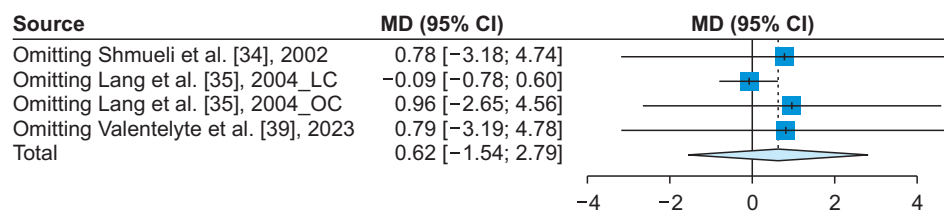
Risk of bias domains

Study	D1	D2	D3	D4	D5	D6	D7	Overall
Shmueli et al. [34], 2002	⊗	⊕	⊕	⊕	⊖	⊕	⊕	⊖
Lang et al. [35], 2004	⊕	⊕	⊕	⊕	⊕	⊖	⊕	⊕
Sheetz et al. [37], 2019	⊗	⊖	⊕	⊕	⊕	⊕	⊖	⊖
Chen et al. [36], 2020	⊗	⊗	⊕	⊖	⊕	⊖	⊖	⊗
Wu et al. [38], 2021	⊖	⊕	⊕	⊕	⊕	⊕	⊕	⊕
Valentelyte et al. [39], 2023	⊗	⊕	⊕	⊕	⊕	⊕	⊖	⊖

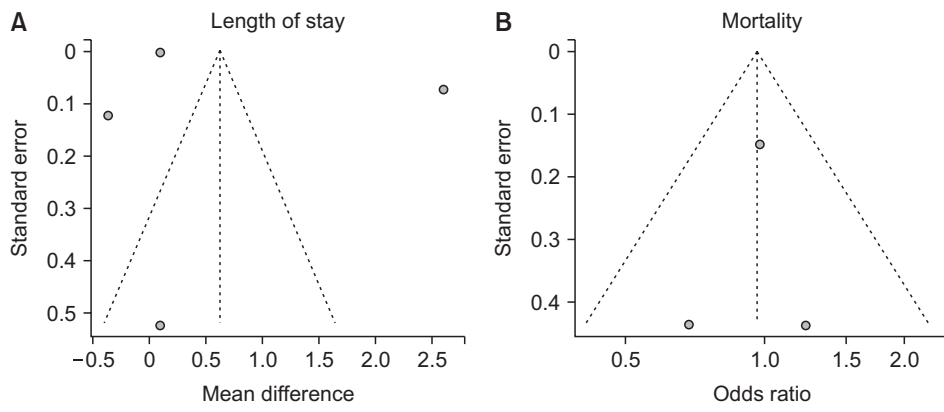
Domains:
 D1: Bias due to confounding.
 D2: Bias due to selection of participants.
 D3: Bias in classification of interventions.
 D4: Bias due to deviations from intended interventions.
 D5: Bias due to missing data.
 D6: Bias in measurement of outcomes.
 D7: Bias in selection of the reported result.

Judgement
 ⊗ Serious
 ⊖ Moderate
 ⊕ Low

Supplementary Fig. 1. Quality evaluation of included studies. Assessment of RoB based on ROBINS-I criteria. (A) RoB summary. (B) RoB traffic light plot. RoB, risk of bias.



Supplementary Fig. 2. Sensitivity analysis for postoperative length of stay. LC, laparoscopic cholecystectomy; OC, open cholecystectomy; MD, mean difference; CI, confidence interval.



Supplementary Fig. 3. Funnel plots of (A) length of stay and (B) mortality.