

Figure S1 funnel plots of publication bias for pooled analyses using Begg's test. (A) The PRS; (B) The SSS; (C) The CRS; (D) postoperative morbidity; (E) mortality; (F) overall survival. PRS: preoperative risk score; SSS: surgical stress score; CRS: comprehensive risk score.

Table S1 summary of subgroup meta-analysis for PRS/SSS/CRS in patients with or without complications

Subgroup	Analysis	Studies	Random-effects model		Fixed-effects model		Heterogeneity	
			OR (95% CI)	P	OR (95% CI)	P	I ²	Ph
PRS								
1- Sample size	≥ 200	3	0.37 (-0.28, 1.02)	0.267	0.32 (0.17, 0.51)	<0.001	94%	<0.001
	< 200	3	1.46 (-0.47, 3.39)	0.139	0.52 (0.25, 0.80)	<0.001	98%	<0.001
2- Location	Japan	4	1.32 (0.15, 2.49)	0.027	0.78 (0.58, 0.98)	<0.001	97%	<0.001
	Not Japan	2	0.03 (-0.15, 0.21)	0.750	0.03 (-0.15, 0.21)	0.750	0	0.778
3- Surgery	GI surgery	3	0.43 (-0.27, 1.13)	0.232	0.59 (0.39, 0.79)	<0.001	91%	<0.001
	HBP surgery	3	1.35 (0.00, 2.70)	0.050	0.21 (0.03, 0.38)	0.023	98%	<0.001
4- Age	Elderly	2	0.62 (-0.26, 1.50)	0.165	0.72 (0.50, 0.95)	<0.001	93%	<0.001
	Younger	4	0.98 (-0.03, 2.00)	0.058	0.18 (0.01, 0.35)	0.033	97%	<0.001
5- CRS cut-off	0.5	3	0.03 (-0.14, 0.20)	0.766	0.03 (-0.14, 0.20)	0.766	0	0.955
	Not 0.5	3	1.79 (0.26, 3.31)	0.022	0.95 (0.73, 1.17)	<0.001	97%	<0.001
SSS								
1- Sample size	≥ 200	3	0.33 (0.17, 0.50)	<0.001	0.33 (0.18, 0.48)	<0.001	16%	0.306
	< 200	3	1.12 (0.10, 2.15)	0.031	0.86 (0.60, 1.13)	<0.001	93%	<0.001
2- Location	Japan	4	0.94 (0.29, 1.60)	0.005	0.69 (0.50, 0.88)	<0.001	90%	<0.001
	Not Japan	2	0.25 (0.07, 0.44)	0.006	0.25 (0.07, 0.44)	0.006	0	0.798
3- Surgery	GI surgery	3	0.52 (0.32, 0.72)	<0.001	0.52 (0.32, 0.72)	<0.001	0	0.828
	HBP surgery	3	0.89 (0.03, 1.75)	0.043	0.42 (0.25, 0.59)	<0.001	95%	<0.001
4- Age	Elderly	2	0.49 (0.27, 0.71)	<0.001	0.49 (0.27, 0.71)	<0.001	0	0.841
	Younger	4	0.82 (0.15, 1.48)	0.016	0.45 (0.28, 0.61)	<0.001	93%	<0.001
5- CRS cut-off	0.5	3	0.31 (0.12, 0.50)	0.001	0.30 (0.13, 0.47)	<0.001	13%	0.317
	Not 0.5	3	1.06 (0.17, 1.94)	0.020	0.70 (0.49, 0.91)	<0.001	93%	<0.001
CRS								
1- Sample size	≥ 200	3	0.47 (-0.01, 1.51)	0.056	0.44 (0.29, 0.59)	<0.001	90%	<0.001
	< 200	5	1.41 (0.43, 2.40)	0.005	0.94 (0.71, 1.17)	<0.001	94%	<0.001
2- Location	Japan	6	1.31 (0.61, 2.01)	<0.001	0.96 (0.78, 1.14)	<0.001	93%	<0.001
	Not Japan	2	0.22 (0.04, 1.51)	0.019	0.22 (0.04, 0.40)	0.019	0	0.626
3- Surgery	GI surgery	4	0.74 (0.38, 1.10)	<0.001	0.77 (0.57, 0.96)	<0.001	66%	0.033
	HBP surgery	4	1.33 (0.31, 2.34)	0.010	0.46 (0.29, 0.63)	<0.001	97%	<0.001
4- Age	Elderly	2	0.76 (0.29, 1.23)	0.002	0.80 (0.58, 1.03)	<0.001	76%	0.043
	Younger	6	1.13 (0.40, 1.85)	0.002	0.49 (0.34, 0.65)	<0.001	94%	<0.001
5- CRS cut-off	0.5	5	0.55 (0.19, 0.91)	0.009	0.37 (0.21, 0.52)	<0.001	76%	0.002
	Not 0.5	3	1.78 (0.44, 3.12)	0.003	1.02 (0.81, 1.24)	<0.001	97%	<0.001

OR: odds ratio; CI: confidence interval; Ph: P value of Q test for heterogeneity test; GI: gastrointestinal; HBP: hepato-biliary-pancreatic; PRS: preoperative risk score; SSS: surgical stress score; CRS: comprehensive risk score.

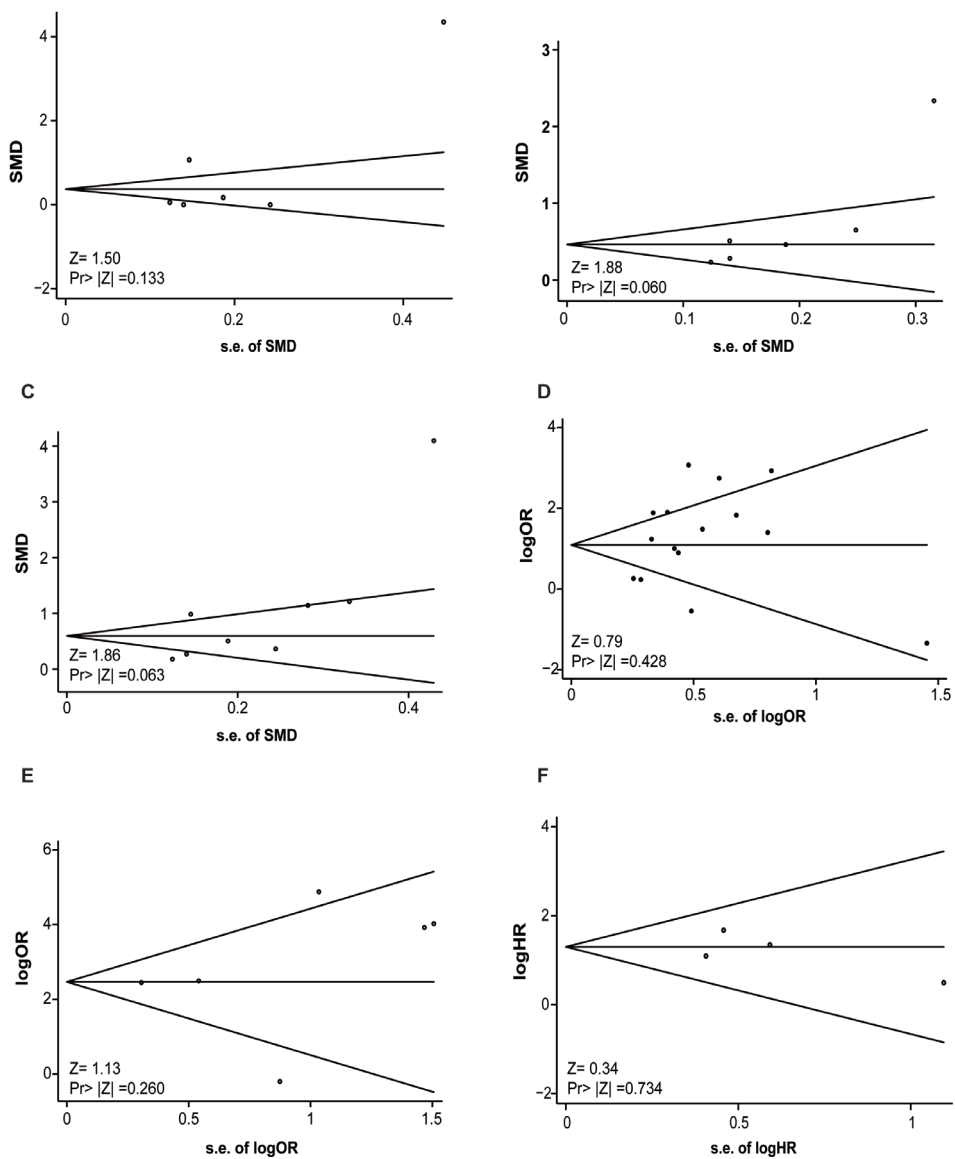


Figure S2 Forest plot of comparison: The group with postoperative complications group *vs.* The group without complications in the PRS. PRS: preoperative risk score.