Supplementary Table 1: Search strategy

Data Base	Search Strategy
PubMed	*(“potassium-competitive acid blocker” OR “potassium competitive acid blocker*” OR “potassium-competitive acid blockers” OR “potassium competitive acid blockers” OR P-CAB OR Fexuprazan OR keverprazan OR revaprazan OR tegoprazan OR vonoprazan) AND (“proton pump inhibitor” OR “proton pump inhibitors” OR PPIs OR PPI OR Dexlansoprazole OR esomeprazole OR lansoprazole OR omeprazole OR pantoprazole OR rabeprazole) AND (dual antiplatelet therapy OR DAPT OR Clopidogrel OR Prasugrel OR Ticagrelor OR “Percutaneous coronary intervention” OR PCI OR “coronary artery disease”)*
Scopus	*ALL ("potassium-competitive acid blocker" OR "potassium competitive acid blocker*" OR "potassium-competitive acid blockers" OR "potassium competitive acid blockers" OR p-cab OR fexuprazan OR keverprazan OR revaprazan OR tegoprazan OR vonoprazan) AND ALL ("proton pump inhibitor" OR "proton pump inhibitors" OR ppis OR ppi OR dexlansoprazole OR esomeprazole OR lansoprazole OR omeprazole OR pantoprazole OR rabeprazole) AND ALL (dual AND antiplatelet AND therapy OR dapt OR clopidogrel OR prasugrel OR ticagrelor OR "Percutaneous coronary intervention" OR pci OR "coronary artery disease")*
Wos	*(((ALL=((“potassium-competitive acid blocker” OR “potassium competitive acid blocker*” OR “potassium-competitive acid blockers” OR “potassium competitive acid blockers” OR P-CAB OR Fexuprazan OR keverprazan OR revaprazan OR tegoprazan OR vonoprazan) AND (“proton pump inhibitor” OR “proton pump inhibitors” OR PPIs OR PPI OR Dexlansoprazole OR esomeprazole OR lansoprazole OR omeprazole OR pantoprazole OR rabeprazole) AND (dual antiplatelet therapy OR DAPT OR Aspirin OR Clopidogrel OR Prasugrel OR Ticagrelor OR “Percutaneous coronary intervention” OR PCI OR “coronary artery disease”))) AND ALL=((“potassium-competitive acid blocker” OR “potassium competitive acid blocker*” OR “potassium-competitive acid blockers” OR “potassium competitive acid blockers” OR P-CAB OR Fexuprazan OR keverprazan OR revaprazan OR tegoprazan OR vonoprazan))) AND ALL=((“proton pump inhibitor” OR “proton pump inhibitors” OR PPIs OR PPI OR Dexlansoprazole OR esomeprazole OR lansoprazole OR omeprazole OR pantoprazole OR rabeprazole))) AND ALL=((dual antiplatelet therapy OR DAPT OR Clopidogrel OR Prasugrel OR Ticagrelor OR “Percutaneous coronary intervention” OR PCI OR “coronary artery disease”))*
Embase	*('potassium competitive acid blocker'/exp OR 'potassium competitive acid blocker' OR 'P-CAB' OR 'Fexuprazan' OR 'Keverprazan' OR 'Revaprazan' OR 'Tegoprazan' OR 'Vonoprazan') AND ('proton pump inhibitor'/exp OR 'proton pump inhibitor' OR 'PPI' OR 'PPIs' OR 'Dexlansoprazole' OR 'Esomeprazole' OR 'Lansoprazole' OR 'Omeprazole' OR 'Pantoprazole' OR 'Rabeprazole') AND ('dual antiplatelet therapy'/exp OR 'dual antiplatelet therapy' OR 'DAPT' OR 'Clopidogrel' OR 'Prasugrel' OR 'Ticagrelor' OR 'percutaneous coronary intervention'/exp OR 'percutaneous coronary intervention' OR 'PCI' OR 'coronary artery disease'/exp OR 'coronary artery disease')*
Cochrane	*(“potassium-competitive acid blocker” OR “potassium competitive acid blocker*” OR “potassium-competitive acid blockers” OR “potassium competitive acid blockers” OR P-CAB OR Fexuprazan OR keverprazan OR revaprazan OR tegoprazan OR vonoprazan) AND (“proton pump inhibitor” OR “proton pump inhibitors” OR PPIs OR PPI OR Dexlansoprazole OR esomeprazole OR lansoprazole OR omeprazole OR pantoprazole OR rabeprazole) AND (dual antiplatelet therapy OR DAPT OR Clopidogrel OR Prasugrel OR Ticagrelor OR “Percutaneous coronary intervention” OR PCI OR “coronary artery disease”)*

Supplementary Table 2: Reasons for exclusion of studies at the full-text stage.

STUDY ID	TITLE	Reasons for exclusion	DOI
J. Lee, 2024	Tu1360 Antiplatelet COMES OF TEGOPRAZAN OR PPI COMBINATION THERAPY IN PATIENTS TAKING ANTIPLATELET AGENTS AFTER PERCUTANEOUS CORONARY INTERVENTION	Abstract only	10.1016/S0016-5085(24)03464-4.
Tamura,2018	Effect of potassium-competitive acid blocker and proton pump inhibitor in preventing bleeding complications in patients undergoing percutaneous coronary intervention,	Abstract only	
Takuma Kagami 2017	Comparative Study of Effects of Vonoprazan and Esomeprazole on Antiplatelet Function of Clopidogrel or Prasugrel in Relation to CYP2C19 Genotype	Different outcomes, no UGIB	10.1002/cpt.863
Ryohkan Funakoshi 2019	Effects of proton pump inhibitors, esomeprazole and vonoprazan, on the disposition of proguanil, a CYP2C19 substrate, in healthy volunteers	Different outcomes, no UGIB	10.1111/bcp.13914
Seiji Koga 2020	Effects of Vonoprazan on the Antiplatelet Function of Prasugrel Assessed by the VerifyNow $P2Y_{12}$ Assay in Patients with Coronary Artery Disease	Different outcomes, no UGIB	10.1253/circrep.CR-20-0124
Tomohiro Higuchi 2022	Influence of daily versus alternate-day dosing of vonoprazan on intragastric pH, serum gastrin, and the antiplatelet function of clopidogrel: Influence of alternate-day dosing of vonoprazan	Different outcomes, no UGIB	10.1007/s00228-022-03313-2
PROTECT- HBR trial 2027	Potassium-competitive acid blocker vs proton-pump inhibitor in patients receiving antithrombotic therapy who are at high risk for gastrointestinal bleeding: Rationale and design of the randomized PROTECT- HBR trial.	RCT protocol	10.1016/j.ahj.2025.04.001
Yu Jeong Lee 2025	Evolving trends in acid suppression therapy among patients undergoing dual antiplatelet therapy: A Nationwide study in South Korea from 2018 to 2022	Different outcomes, no UGIB	10.1111/bcp.16398

Supplementary Table 3: Covariates Included in Adjustment Models of the Included Studies

Study ID	Adjustment Method	Covariates Included in Adjustment
Tsujita et al. (2020)	Multivariable regression	Age, sex, comorbidities, concomitant medications (as reported; full list not consistently specified)
Sasaki et al. (2024)	Limited / unclear adjustment	Not clearly reported
Baik et al. (2025)	Propensity score matching + regression	Age, sex, comorbidities (e.g., diabetes, hypertension), prior gastrointestinal events, concomitant medications (e.g., NSAIDs, antithrombotic therapy)
Y.J. Lee et al. (2025)	Propensity score matching	Age, sex, comorbidities, medication use (exact covariates based on propensity score model; full list not fully detailed)
Y. Lee et al. (2024)	Descriptive analysis	No adjustment performed
J. Lee et al. (2026)	Multivariable regression	Selected clinical variables; however, adjustment was incomplete, contributing to serious risk of confounding bias
Tsujita et al. (2020)	Multivariable regression	Age, sex, comorbidities, concomitant medications (as reported; full list not consistently specified)

Supplementary Table 4: Risk of bias assessment using the Cochrane ROBINS-I tool

ROBINS I								
Study ID	**Confounding**	**Selection of Participants**	**Classification of Interventions**	**Deviations from Intended Interventions**	**Missing Data**	**Measurement of Outcomes**	**Selection of Reported Results**	**Overall Risk of Bias**
Tsujita et al. (2020)	Moderate	Low	Low	Low	Low	Low	Low	Moderate
Sasaki et al. (2024)	Serious	Moderate	Low	Low	Low	Low	Low	Serious
Baik et al. (2025)	Low	Low	Low	Low	Low	Low	Low	Low
Y.J. Lee et al. (2025)	Low	Low	Low	Low	Low	Low	Low	Low
Y. Lee et al. (2024)	Serious	Moderate	Low	Low	Moderate	Low	Low	Serious
J. Lee et al. (2026)	Serious	Moderate	Low	Low	Low	Low	Low	Serious

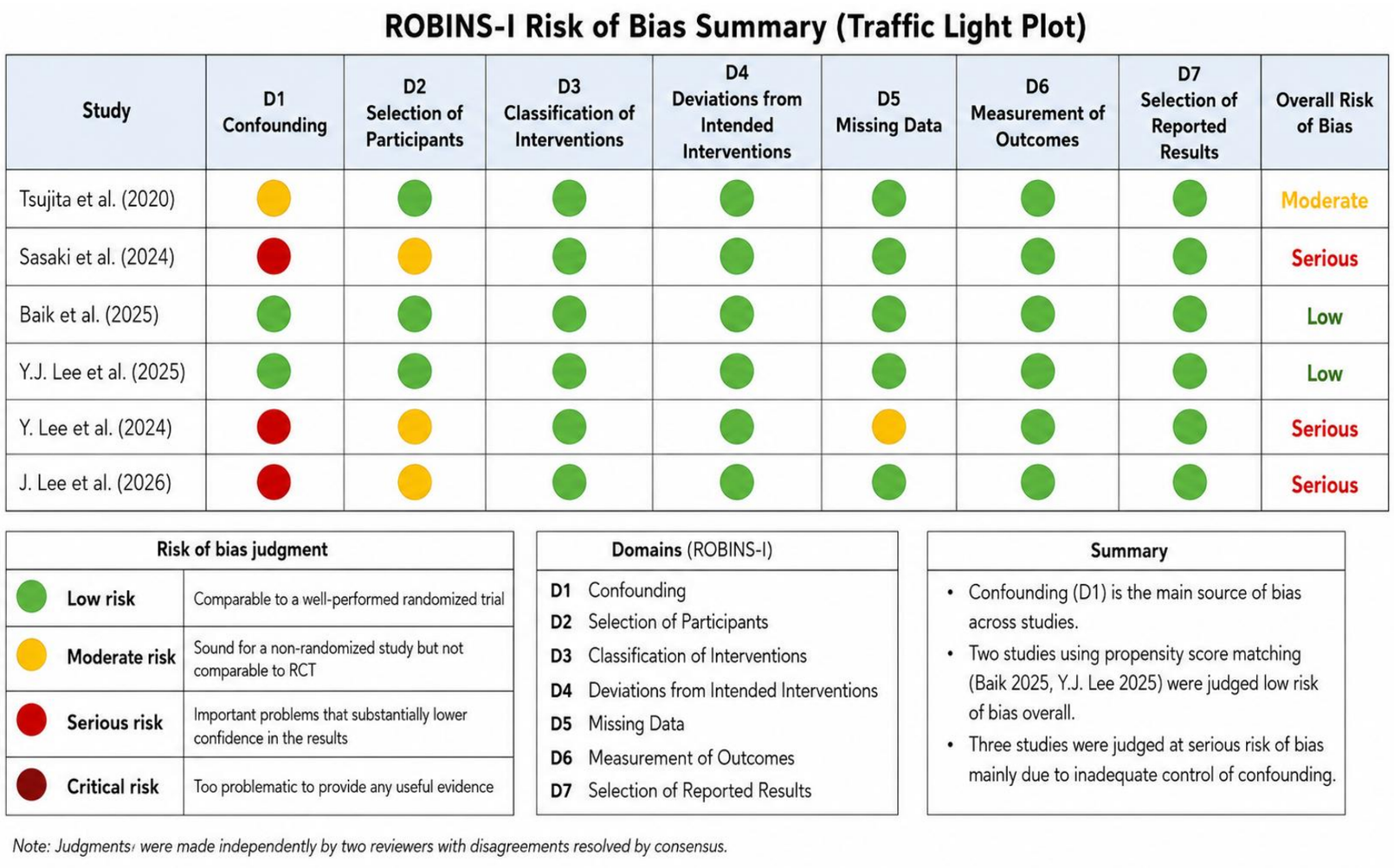
Supplementary Table 5: GRADE assessment.

№ of studies	Certainty assessment						Effect			Certainty	Importance
	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication Bias	№ of events PCABs vs. PPIs	№ of individuals PCABs vs. PPIs	Pooled OR (95% CI)		
Risk of UGIB PCABs vs. PPIs											
Six	observational studies	serious[1]	Not serious[2]	Not serious[3]	Serious[4]	Undetected	81 / 357	14429 / 27875	1.03 (95% CI: 0.77–1.37)	⨁◯◯◯ Very low	IMPORTANT

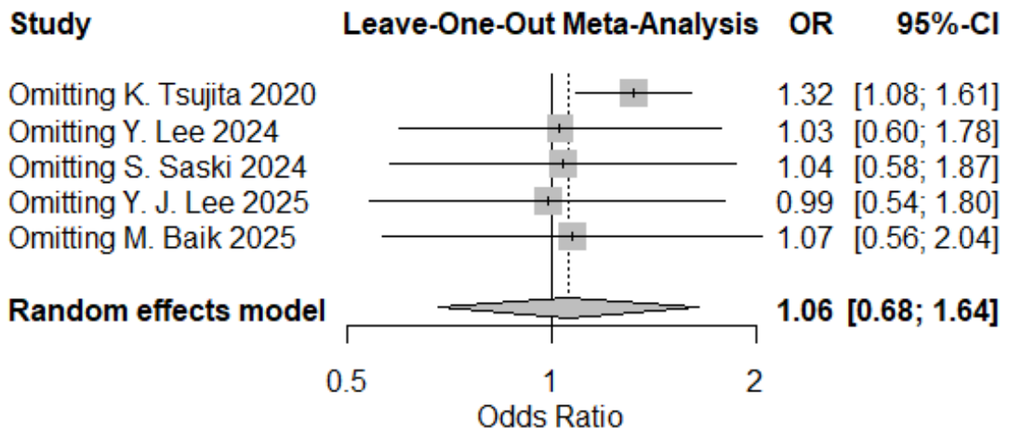
Footnotes

1. **Risk of Bias:** three studies had serious concerns, leading to a downgrade.
2. **Inconsistency:** Low heterogeneity ($I^2 = 4\%$) and consistent direction of effect; no downgrade.
3. **Indirectness:** All studies directly compared PCABs vs PPIs in relevant populations with clinically meaningful outcomes; no downgrade.
4. **Imprecision:** The pooled OR (1.03, 95% CI: 0.77–1.37) crosses the line of no effect, with wide confidence intervals in smaller studies; downgraded.
5. **Publication Bias:** only Six studies including; limited number of studies; no downgrade.

Supplementary Figure 1: Risk of bias assessment using the Cochrane ROBINS-I tool.



Supplementary Figure 2: Leave-one-out for studies in our meta-analysis



Supplementary Figure 3: Leave-one-out by excluding studies at serious risk of bias due to inadequate adjustment for confounders