INPLASY PROTOCOL

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The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Systematic evaluation and meta-analysis of the efficacy and tolerability of tegoprazan in an Asian population

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Review question / Objective: **P: ulcers in an Asian population. I/E: Oral tegoprazan treatment. C: Placebo or other PPIs treatment. O: Tegoprazan was not less effective than conventional PPIs in the treatment of peptic ulcers in the Asian population. S: Randomized controlled experiments.**
Condition being studied: **Tegoprazan was not less effective than conventional PPIs in the treatment of peptic ulcers in the Asian population. Furthermore, the various adverse effects of tegoprazan were not different from those of conventional PPIs. Tegoprazan was tolerated reasonably well in the Asian population.**
Information sources: **The following electronic databases were searched by computer: PubMed, Embase, Cochrane Library, and ClinicalTrials.gov.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 15 March 2022 and was last updated on 15 March 2022 (registration number INPLASY202230070).

INTRODUCTION

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METHODS

Search strategy: The following search terms were used: tegoprazan, potassium-competitive, acid blocker, P-CAB, proton pump inhibitors, PPI, PPIs, potassium-competitive acid inhibitors, peptic ulcer, and gastric ulcer.

Participant or population: Ulcers in an Asian population.

Intervention: Oral tegoprazan treatment.

Comparator: Placebo or other PPIs treatment.

Study designs to be included: Randomized controlled experiments.

Eligibility criteria: The inclusion criteria were all randomized controlled trials of tegoprazan for peptic ulcer published both nationally and internationally and study outcomes that included any of the following: peptic ulcer healing rate, gastrointestinal reactions following drug treatment, neurological adverse reactions, any adverse reactions, drug-related adverse reactions, and any serious adverse reactions.

Information sources: The following electronic databases were searched by computer: PubMed, Embase, Cochrane Library, and ClinicalTrials.gov.

Main outcome(s): tegoprazan was not less effective than conventional PPIs in the treatment of peptic ulcer in the Asian population (relative risk, 1; 95% confidence interval [CI], 0.98–1.01; P = 0.64; I2 = 0%). Moreover, between tegoprazan and conventional PPIs, no differences were observed in: gastrointestinal response (odds ratio [OR], 1; 95% CI, 0.60–1.66; P = 0.71; I2 = 0%), neurological adverse reactions (OR, 1; 95% CI, 0.43–6.03; P = 0.84; I2 = 0%), any adverse reactions (OR, 0.84; 95% CI, 0.61–1.15; P = 0.71; I2 = 0%), drug-related adverse reactions (OR, 0.86; 95% CI, 0.56–1.33; P = 0.72; I2 = 0%), and any serious adverse reactions (OR, 1.65; 95% CI, 0.45–6.04; P = 0.64; I2 = 0%).Tegoprazan was not less effective than conventional PPIs in the treatment of peptic ulcers in the Asian population.

Data management: RevMan 5.3 software.

Quality assessment / Risk of bias analysis: Assessment was conducted using the Cochrane Collaboration's tool for assessing the risk of bias in randomized trials. The main components were random sequence generation (selection bias), allocation concealment (selection bias), blinding of outcome assessment (detection bias), incomplete outcome data (attrition bias), selective reporting (reporting bias), and other biases.

Strategy of data synthesis: Data were analyzed using the RevMan 5.3 software. The relative risk (RR) or odds ratio (OR) and its 95% confidence interval (CI) were used as statistics for efficacy analysis, and differences were considered statistically significant at $P \leq 0.05$. Statistical heterogeneity among the included studies was also quantified using the $\chi 2$ test at $\alpha = 0.10$, and I2 was used to quantify the heterogeneity. When $P < 0.1$ and $I2 > 50\%$, the statistical heterogeneity among the studies was considered large. The random-effects model was employed for meta-analysis, and when the number of included studies was ≥10, the Egger and Begger tests were used for the assessment of publication bias.

Subgroup analysis: No subgroup analysis was performed in this work.

Sensitivity analysis: No sensitivity analysis was performed in this work.

Language: No language limitations.

Country(ies) involved: China.

Keywords: Tegoprazan; Proton pump inhibitor; Peptic ulcer; Meta-analysis.

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