INPLASY

Effects of adding adjuvants to propofol on the post-anesthesia cognitive function in patients undergoing gastroscopy/colonoscopy: A systematic review and meta-analysis

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ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY2023110092

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 23 November 2023 and was last updated on 23 November 2023.

INTRODUCTION

Review question / Objective How about the effects of adding adjuvants to propofol on the post-anesthesia cognitive function for patients with gastroscopy/colonoscopy.

Condition being studied Patients with gastroscopy/colonoscopy.

METHODS

Participant or population Patients who underwent gastroscopy/colonoscopy.

Intervention Propofol in combination with other anaesthetics.

Comparator Propofol alone.

Study designs to be included RCT, cohort study, case-control study.

Eligibility criteria The eligibility criteria are: 1) population: patients who underwent gastroscopy/colonoscopy; 2) intervention: propofol or propofol in combination with other anaesthetics; 3) outcome: cognitive function was tested regardless of testing tools; and 4) full-text was available. The records were first screened based on the titles and abstracts. Then, the full-text articles were assessed for eligibility. Exclusion criteria are: 1) If more than one paper reported the same study population, only the paper with the largest amount of analyzable data was included. 2) Case series, case reports, animal studies, in vitro studies, protocols, reviews, and meta-analyses. 3) Reports that contained no data that could be summarized. 4) Non-English or non-Chinese language citations.

Information sources China National Knowledge Infrastructure (CNKI), Wanfang data, Sinomed, PubMed, Embase, Cochrane Library, Web of Science, and Clinictrials.gov were searched for available papers published up to Sept, 2023.

Main outcome(s) Cognitive function tested with any tool.

Quality assessment / Risk of bias analysis The level of evidence of all articles will assessed independently by two authors(Liupu Zheng and Mengqian Ye) according to the Newcastle-Ottawa Scale (NOS) criteria for quality assessment of cohort studies and the Cochrane Collaboration tool to assess the randomized controlled trials (RCTs). The NOS contains eight items (representativeness of the exposed cohort, selection of the non-exposed cohort, ascertainment of exposure, demonstration that outcome of interest was not present at the start of the study, comparability of cohorts based on the design or analysis, assessment of outcome, was follow-up long enough for outcomes to occur, and adequacy of follow up of cohorts); the maximum score is 9 points, and a score higher than 6 points is considered high quality. The Cochrane Collaboration tool evaluates seven potential sources of bias (selection bias, performance bias, detection bias, attrition bias, reporting bias, and other biases). Each possible item will evaluated as having a low, unclear, or high risk of bias. Discrepancies in the assessment will resolved through discussion until a consensus is reached.

Strategy of data synthesis The Bayesian hierarchical (i.e., random-effects) meta-analysis model will used to analyze the scale score changes in each eligible study. Posterior distributions will obtained after the input of prior distribution (mean=0, standard deviation (SD)=100) to the Bayesian meta-analysis. Since the scale score is a continuous variable, the effect size (μ), standard mean difference (SMD), and 95% CI (the Bayesian analogue of a frequentist CI) for each dimension in the experimental group will be estimated as well as heterogeneity (τ). A sensitivity analysis will performed by adjusting for the half-normal (HN) prior distributions, with scale parameters of 1.0. The bayesmeta and metafor packages in R 4.0.3 will used for data analysis. Patient satisfaction will analyzed using RevMan. Pooled forest plots will presented for all outcomes. The meta-analysis will performed using a random-effects model because we hypothesized a high degree of between-study heterogeneity. Two-sided P-values <0.05 are considered statistically significant.

Subgroup analysis None.

Sensitivity analysis A sensitivity analysis will performed by adjusting for the half-normal (HN) prior distributions, with scale parameters of 1.0.

Country(ies) involved China.

Keywords adjuvant; cognitive function; colonoscopy; gastroscopy; systematic review and meta-analysis.

Contributions of each author

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