

INPLASY PROTOCOL

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None declared.

Preoperative anxiety and postoperative delirium: a systematic review and meta-analysis

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Review question / Objective: What is the relationship between preoperative anxiety and postoperative delirium in hospitalized adults people? The objective of this research is to analyze the effect of preoperative anxiety on the incidence of postoperative delirium in adult surgery patients, through a systematic literature review.

Information sources: The databases to be consulted will be MEDLINE, Embase, Cochrane Library, Web of Science, Cumulative Index to Nursing and Allied Health Literature (CINAHL). In addition, the protocol registers of the systematic reviews (PROSPERO and INPLASY) will be searched.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 07 January 2022 and was last updated on 07 January 2022 (registration number INPLASY202210027).

INTRODUCTION

Review question / Objective: What is the relationship between preoperative anxiety and postoperative delirium in hospitalized adults people? The objective of this research is to analyze the effect of preoperative anxiety on the incidence of postoperative delirium in adult surgery

patients, through a systematic literature review.

Condition being studied: Postoperative delirium (POD), commonly encountered after surgery, is a cognitive disturbance characterized by acute and fluctuating impairment in attention and awareness. According to reports, POD affects 11~51%

patients after major surgery, and it is independently associated with adverse short- and long-term outcomes such as prolonged mechanical ventilation and hospital stay, a higher rate of postoperative complications and mortality, cognitive dysfunction and functional disability. However, the pathogenesis of POD remains unclear, so it is particularly important to identify risk factors to prevent its occurrence. Anxiety, an emotional response to stimuli that humans perceive as threatening, is a common feeling experienced by many patients who are going to be operated. The incidence of preoperative anxiety has been reported to be as much as 80% among adult patients. Some observational studies reported that patients with preoperative anxiety were predisposed to mental disorders including delirium and cognitive dysfunction. In addition, several randomized controlled trials (RCTs) found that alleviating preoperative anxiety, be it through pharmacological or other non-pharmacological interventions, strikingly decreased the incidence of postoperative delirium. Although multiple studies have supported the viewpoint that preoperative anxiety are significantly associated with POD, some studies obtained negative results. Thus, we designed this systematic review and meta-analysis to clarify the effect of preoperative anxiety on the incidence of delirium in adult surgery patients.

METHODS

Search strategy: The controlled (e.g. Mesh and Emtree) and natural language will be adjusted according to the database and platform used. The search strategy will be applied by the researchers in the MEDLINE databases through the OVID Portal; Embase; Cochrane Library; Web of Science; Cumulative Index to Nursing and Allied Health Literature (CINAHL). No languages restrictions. The MEDLINE search was as follows: [(exp delirium/) OR (exp Confusion/) OR (deliri*.ab.) OR (Psychomotor Agitation/) OR (hallucinations/ or illusions/) OR (Delusions/) OR ((deliri* or confusion* or

clouded state*).ab.) OR ((acute brain adj3 (dysfunction* or failure* or syndrome*)).ab.) OR ((cognitive adj3 (impairment or defect* or deficit*)).ab.) OR (("icu syndrome" or (intensive adj2 care adj2 unit adj2 syndrome)).ab.) OR (((psycho-organic syndrome* or psychoorganic syndrome* or organic psychosyndrome* or organic psycho-syndrome*) adj3 acute).ab.) OR ((cloud* adj3 consciousness*).ab.) OR (("exogenous psychosis" or "toxic psychosis" or "icu psychosis" or "metabolic encephalopath*").ab.)] AND [Anxiety/ OR (Stress, Physiological/ or Stress, Psychological/) OR (fear/ or panic/) OR ((anxiety or anxieties or anxious or phobi\$ or panic or stress\$ or distress\$ or fear\$ or worry or worried).ab.)].

Participant or population: Adult patients who underwent surgery.

Intervention: None.

Comparator: Postoperative delirium and without postoperative delirium.

Study designs to be included: Observational studies.

Eligibility criteria: Presence of preoperative anxiety and postoperative delirium, hospitalized, adults.

Information sources: The databases to be consulted will be MEDLINE, Embase, Cochrane Library, Web of Science, Cumulative Index to Nursing and Allied Health Literature (CINAHL). In addition, the protocol registers of the systematic reviews (PROSPERO and INPLASY) will be searched.

Main outcome(s): Postoperative delirium.

Additional outcome(s): None.

Quality assessment / Risk of bias analysis: Newcastle-ottawa scale.

Strategy of data synthesis: Odds ratios (ORs) with corresponding 95% CIs were pooled using a random-effects model, accounting for clinical heterogeneity.

Statistical heterogeneity across trials was assessed by the Cochran Q test (with $P < 0.1$ indicating significance) and quantified by the I^2 statistic. An I^2 value exceeding 50% was considered to represent significant heterogeneity. Publication bias was assessed by visually inspecting a funnel plot and also evaluated by using the Begg and Egger tests. A two-sided P value less than 0.05 was considered statistically significant. All analyses were performed with Review Manager Software version 5.3.

Subgroup analysis: To explore the source of heterogeneity, subgroup analysis was conducted on the basis of existed features: age(adults or elderly people), surgery type(cardiac surgery or non-cardiac surgery).

Sensitivity analysis: Sensitivity analysis was conducted by omitting one study in turn to examine the reliability and conclusiveness of the available evidence.

Country(ies) involved: China.

Keywords: postoperative delirium; Preoperative anxiety; Hospitalized patient, inpatient.

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