INPLASY PROTOCOL

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None declared.

Sleep interventions for amelioration of postoperative delirium and cognitive dysfunction: A systematic review and meta-analysis

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Review question / Objective: **How does sleep interventions during perioperative period affect the incidence of postoperative delirium and cognitive dysfunction in patients undergoing elective surgery? Population: Patients undergoing elective surgery; Intervention: Where available, sleep interventions to prevent or treat postoperative delirium in patients undergoing elective surgery; Comparison: Comparisons between sleep interventions and no intervention; Outcome: The primary outcome is the incidence of postoperative delirium; Study: RCTs.**
Condition being studied: **Sleep and circadian rhythm disruptions are frequently reported before and after surgery. Sleep modifications are likely to contribute to the development of postoperative delirium, a common neuropsychological disorders following anaesthesia and surgery. This systematic review aims to clarify the association between sleep modifications and postoperative delirium incidence in patients undergoing elective surgery.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 29 January 2023 and was last updated on 29 January 2023 (registration number INPLASY202310083).

INTRODUCTION

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METHODS

Participant or population: Patients undergoing elective surgery.

Intervention: Sleep interventions during perioperative period.

Comparator: Sleep interventions vs. routinary care.

Study designs to be included: RCTs.

Eligibility criteria: Inclusion criteria:(1) Patients aged 18 years or older;(2) Patients undergoing elective surgery;(3) Articles reporting the effect of sleep intervention on postoperative delirium;Exclusion criteria: We exclude studies which are case reports, reviews, comments, editorials, perspectives, erratum, unpublished manuscripts, conference abstracts.

Information sources: We searched the Cochrane Central Register of Controlled Trials in the Cochrane Library, MEDLINE OvidSP and Embase OvidSP from the beginning of the database to December, 2022.

Main outcome(s): The incidence of postoperative delirium. Postoperative delirium was diagnosed using one of the validated diagnostic methods, such as the Diagnostic and Statistical Manual of Mental Disorders (DSM) criteria, Confusion Assessment Method (CAM), CAM for the ICU (CAM-ICU), Intensive Care Delirium Screening Checklist (ICDSC), Neelon and Champagne (NEECHAM) Confusion Scale or NuDESC.

Quality assessment / Risk of bias analysis: Eligible reports will be independently assessed for quality assessment by at least two Authors. We deal with disagreements by a consensus meeting between the three authors. The quality of included RCTs will be evaluated by means of Cochrane ROB2. We assessed risk of bias separately for different domains, namely: random sequence generation, allocation concealment, blinding of participants, personnel and outcome assessors, blinding of outcome assessment; incomplete outcome data; and other biases such as reporting bias. Each domain was assessed as low, high or unclear risk of bias.

Strategy of data synthesis: The meta-analysis is performed with RevMan V5.4 software. Risk ratio (RR) is used for dichotomous outcomes and mean difference (MD) is adopted for continuous outcomes. Heterogeneity is examined using the I^2 test. If the heterogeneity is significant ($I^2 > 50\%$), a random-effects model will be applied, otherwise a fix-effects model will be used. The confidence interval (CI) is established at 95%. $P<0.05$ were considered statistically significant. Publication bias will be assessed with a funnel plot if sufficient trials (≥10 trials) are included in the meta-analysis.

Subgroup analysis: If possible, subgroup analysis will be carried out. We will conduct subgroup analysis based on type of sleep intervention (dexmedetomidine, melatonin,bright light therapy and other interventionsnons).

Sensitivity analysis: If possible, sensitivity analysis will be carried out.

Country(ies) involved: China.

Keywords: sleep, postoperative delirium, perioperative period.

Contributions of each author:
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