INPLASY

Corresponding author:
Chang Meng

15931865117@163.com

Author Affiliation:
Emergency General Hospital.

The efficacy of melatonin and its agonists in treating ICU patients with delirium:a systematic review and meta-analysis

Wang, SF; Cui, J; Zhou, H; Sun, J; Miao, GB; Meng, C.

ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Data analysis.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202620019

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 5 February 2026 and was last updated on 5 February 2026.

INTRODUCTION

Review question / Objective We conducted a meta-analysis to compare the effect of melatonin and its agonists in preventing delirium in ICU patients.

Condition being studied The evaluation metrics included the incidence of delirium, duration of delirium, postoperative delirium, ICU length of stay, mortality rate, and total hospital length of stay.

METHODS

Participant or population Adult ICU inpatients

Intervention Melatonin and its agonists.

Comparator Placebo.

Study designs to be included The search strategy was RCTs.

Eligibility criteria (1) Adult ICU inpatients; (2) Intervention: oral administration of melatonin(0.3-10mg/d) or its agonist ramelteon (8mg/d); (3) Outcomemeasures: delirium occurrence (mandatory), plus at least one of the following: time to delirium onset, length of ICU stay, ICU mortality, total hospital stay.

Information sources A comprehensive manual search of the PubMed, Embase and Cochrane databases was conducted in order to select relevant randomised controlled trials. Should the necessity arise to obtain pertinent research data, the authors will be duly contacted.

Main outcome(s) Incidence of delirium, duration of delirium, postoperative delirium, ICU length of stay, mortality rate, and total hospital length of stay.

Quality assessment / Risk of bias analysis We evaluated the methodological quality of the individual studies using the Cochrane risk of bias tool for RCTs.

Strategy of data synthesis For the discontinuous outcomes, relative risk (RR) and 95% CIs were estimated as effective. For the continuous outcomes, mean differences (MD) and 95% CIs were estimated as effective.

Subgroup analysis We will conduct the following pre-specified subgroup analyses: 1. Based on drug dosage, including melatonin 3 mg, melatonin at other doses, and melatonin receptor agonists; 2. Based on outcome measures, including the incidence of delirium, duration of delirium, and length of ICU stay,mortality rate, and total hospital length of stay.

Sensitivity analysis We conducted sensitivity analyses to investigate the influence of a single study on the overall pooled estimate of each predefined outcome.

Country(ies) involved China.

Keywords Melatonin, Agonist, Delirium, ICU, Efficacy.

Contributions of each author
Author 1 - Shufang Wang.
Author 2 - Juan Cui.
Author 3 - Hong Zhou.
Author 4 - Jing Sun.
Author 5 - Yue Zhao.
Author 6 - Guobin Miao.
Author 7 - Chang Meng.