# INPLASY PROTOCOL

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**Review Stage at time of this submission: The review has not yet started.**

**Conflicts of interest:**
**None.**

## Systematic review and meta-analysis: suvorexant (with or without ramelteon) for prevent delirium

Han, Y[1]; Wu, J[2]; Qin, Z[3].

**Review question / Objective:** **Whether suvorexant (with or without ramelteon) prevent delirium?**
**Condition being studied:** **Delirium is a common complication, especially in elderly patients. This complication is characterized by a transient global disturbance in attention, consciousness and cognition. Delirium has been associated with increased morbidity and mortality, prolonged hospital stay and additional healthcare expenses.**
**Information sources:** **PubMed, Cochrane Library, Web of Science, Embase, and EBSCOhost were searched.. publication period: the deadline is may, 31,2020.**

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 05 May 2020 and was last updated on 05 May 2020 (registration number INPLASY202050017).

## INTRODUCTION

**Review question / Objective: Whether suvorexant (with or without ramelteon) prevent delirium?**

**Condition being studied: Delirium is a common complication, especially in elderly patients. This complication is characterized by a transient global disturbance in attention, consciousness and cognition. delirium has been associated with increased morbidity and mortality,**

prolonged hospital stay and additional healthcare expenses.

## METHODS

**Participant or population:** Inclusion: Adult patients in hospital Exclusion: Adolescents under 18 years of age.

**Intervention:** Suvorexant with or without ramelteon.

**Comparator:** Log Odds Ratio and Mean Differences (MD) with the 95%CI.

**Study designs to be included:** Randomized controlled trial(RCT), case control study and cohort study.

**Eligibility criteria:** Study selection：1.Two investigators (Han and Wu) independently identified potentially relevant studies according to the titles and abstracts. 2. Any disagreements or differences in opinions were resolved by consensus with a third reviewer (Qin). Data extraction：1.The following information was obtained from each included study: first author, publication year, number of patients, demographic characteristics, dosages of suvorexant and ramelteon, follow-up duration, diagnostic criteria, incidence of delirium, anaesthesia and surgery and study design. 2.Extracteddata were summarized in a predefined Excel file. 3.Two investigators (Han and Wu) independently extract the data, If no agreement could be reached, a third author(Qin) arbitrated.

**Information sources:** PubMed, Cochrane Library, Web of Science, Embase, and EBSCOhost were searched.. publication period:the deadline is may, 31,2020.

**Main outcome(s):** The incidence and duration of delirium.

**Additional outcome(s):** None.

**Quality assessment / Risk of bias analysis:** Cochrane Handbook for Systematic

Reviews of Interventions and Newcastle-Ottawa Scales used to assess risk of bias.

**Strategy of data synthesis:** Meta-analyses were conducted using the Stata statistical software version 16.0 (StataCorp, College Station, TX, USA). the Log relative risk (log RR) and Mean differences (MD) with the 95% CI. The percentage of heterogeneity across the studies was estimated by $I^2$ statistic. An $I^2$ statistic of $<0.25$ (25%) denoted low heterogeneity , 0.25 (25%) to 0.5 (50%) denoted moderate heterogeneity, $>0.5$ (50%) as denoted high heterogeneity.Whenever no substantial heterogeneity was observed, fixed effect model was used. When substantial heterogeneity was observed, the random effect model was utilized.

**Subgroup analysis:** With ramelteon and without ramelteon.

**Sensibility analysis:** Potential publication bias was assessed by inspection of the funnel plot. Whenever asymmetry was detected in the funnel plot, the trim and-fill method was used to estimating the number of missing studies.

**Language:** English.

**Country(ies) involved:** China.

**Keywords:** Systematic review and meta-analysis; suvorexant; ramelteon; delirium.

**Contributions of each author:**
Author 1 - Yunyang Han.
Author 2 - Jie WU.
Author 3 - Yunyang Han.