

INPLASY

Stress hyperglycemia ratio and delirium:
a systematic review and meta-analysis

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Sciences.**ADMINISTRATIVE INFORMATION****Support** - None.**Review Stage at time of this submission** - Data analysis.**Conflicts of interest** - None declared.**INPLASY registration number:** INPLASY202670073**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 19 July 2026 and was last updated on 19 July 2026.**INTRODUCTION**

Review question / Objective Our aim is to establish SHR as a robust, clinically accessible biomarker for delirium risk stratification, potentially enabling earlier interventions and improved outcomes.

Condition being studied The research team comes from the Department of Critical Care Medicine of a tertiary hospital in China, and all the team members have perfect clinical experience in critical care and resuscitation. Moreover, our team members have published more than 50 meta analyses, which can guarantee the successful completion of the current research.

METHODS

Participant or population Hospitalized adult patients (≥ 18 years).

Intervention SHR, defined as the ratio of admission blood glucose to eAG derived from HbA1c.

Comparator Lower SHR (as a continuous variable or in categorical groups, e.g., quartiles).

Study designs to be included Prospective and retrospective cohort designs, case-control studies.

Eligibility criteria We included observational studies (cohort and cross-sectional designs) that focused on hospitalized adult patients (≥ 18 years), with measured SHR on the risk of delirium.

Information sources PubMed (MEDLINE), Embase (via Ovid), and Cochrane Central Register of Controlled Trials (CENTRAL).

Main outcome(s) Incident delirium.

Quality assessment / Risk of bias analysis The methodological quality of all included cohort studies was assessed independently using the Newcastle-Ottawa Scale (NOS) for cohort studies.

Strategy of data synthesis Meta-analysis.

Subgroup analysis We planned subgroup analyses by clinical setting, delirium assessment tool, delirium rate, and population.

Sensitivity analysis sensitivity analyses were conducted by including studies based on the different SHR cut-offs used to define high exposure , or ROC-derived thresholds.

Country(ies) involved China.

Keywords stress hyperglycemia ratio, delirium, critical illness, meta-analysis.

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