# INPLASY

## Methylene blue for the adjunctive therapy of septic shock: a systematic review and meta-analysis of randomized controlled study

**Corresponding author:**
Hui-Bin Huang

psyc6789@163.com

**Author Affiliation:**
Guang'anmen Hospital, China Academy of Chinese Medical Sciences.

Huang, HB; Zheng, WH; Yu, DX.

## ADMINISTRATIVE INFORMATION

**Review Stage at time of this submission -** Completed but not published.

**Conflicts of interest -** None declared.

**INPLASY registration number:** INPLASY202610083

**Amendments -** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 25 January 2026 and was last updated on 25 January 2026.

## INTRODUCTION

**Review question / Objective** The current study was aimed to investigate the effect of methylene blue as adjunctive therapy on the clinical outcomes among this patient population.

**Condition being studied** 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** Adult patients diagnosed with septic shock, with the definition of septic shock explicitly aligning with the relevant guidelines.

**Intervention** MB, with no restrictions on dosage, timing of administration, or duration of therapy.

**Comparator** Placebo or no intervention of MB.

**Study designs to be included** Not limited.

**Eligibility criteria** Randomized controlled study (RCT) that investigated the effectiveness of methylene blue in treating septic shock.

**Information sources** PubMed, Embase, Cochrane Library, Web of Science, and Chinese databases (Wanfang, VIP, and CNKI).

**Main outcome(s)** Mortality.

**Quality assessment / Risk of bias analysis** Cochrane risk of bias tool.

**Strategy of data synthesis** Meta-analysis.

**Subgroup analysis** Subgroup analyses were conducted based on mortality risk (>40% or ≤40%), MB treatment (>24 hours or ≤24 hours), MB solvents (saline or glucose solution), and race (Asian or non-Asian populations).

**Sensitivity analysis** (1) sample size >50; (2) sepsis 3.0; (3) double-blind design; and (4) published after 2012.

**Country(ies) involved** China.

**Keywords** methylene blue, septic shock, mortality, meta-analysis.

**Contributions of each author**
Author 1 - Hui-bin Huang.
Email: psyc6789@163.com
Author 2 - Wenhe Zheng.
Email: wenhe0350@sina.com
Author 3 - Da-Xing Yu.
Email: xingxingyu121@sina.com