

INPLASY

INPLASY202680027

doi: 10.37766/inplasy2026.8.0027

Received: 5 August 2026

Published: 5 August 2026

Corresponding author:

Zhang Jing

1136533704@qq.com

Author Affiliation:

West China Second Hospital of
Sichuan University.

Anticoagulation Monitoring and Nursing Management of Bleeding and Thrombosis in Neonatal Extracorporeal Membrane Oxygenation: A Scoping Review

Jing, Z.

ADMINISTRATIVE INFORMATION

Support - No support.

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

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202680027

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

INTRODUCTION

Review question / Objective Population: Neonates (≤ 28 days) receiving ECMO support

Concept: Anticoagulation monitoring, bleeding and thrombosis risk assessment and management, circuit thrombosis

Context: ECMO cannulation, initiation, ongoing support, weaning, decannulation, and early monitorin.

Rationale This scoping review aims to systematically map the existing evidence regarding anticoagulation monitoring in neonates receiving ECMO support. Given the critical balance between bleeding and thrombosis risks in this population, synthesizing current practices and outcomes is essential to inform clinical decision-making and identify gaps for future research.

Condition being studied Population: Neonates on ECMO.

METHODS

Search strategy The literature search was conducted in PubMed/MEDLINE, Ovid Embase, Web of Science Core Collection, Scopus, Cochrane Central Register of Controlled Trials, CNKI, WanFang, and VIP databases.

Participant or population Neonates receiving extracorporeal membrane oxygenation support for any underlying condition.

Intervention • Outcome focus: Anticoagulation monitoring, bleeding, thrombosis, nursing management.

Comparator Not applicable.

Study designs to be included • Study types: Original clinical studies, case reports/series, surveys/QI projects, reviews, guidelines/consensus statements.

Eligibility criteria Exclusion criteria include animal studies, studies limited to adult ECMO populations without extractable neonatal data, conference abstracts without full text, and editorials, letters, or commentaries.

Information sources PubMed/MEDLINE, Ovid Embase, Web of Science, Scopus, Ovid CENTRAL, CNKI, Wanfang, VIP.

Main outcome(s) Primary outcomes include anticoagulation monitoring parameters, incidence of bleeding complications, and incidence of thrombotic events.

Additional outcome(s) Secondary outcomes include ACT, APTT, anti-Xa levels, platelet count, fibrinogen, D-dimer, transfusion requirements, and circuit coagulation.

Data management Data will be extracted by a single reviewer using a standardized form, with independent guidance and review provided by senior team members for key steps. Any borderline decisions will be resolved through group discussion.

Quality assessment / Risk of bias analysis A unified methodological quality assessment was not performed for different types of evidence, and quality appraisal was not used as a basis for exclusion.

Strategy of data synthesis Meta synthesis will be conducted narratively without a Meta-analysis. Evidence will be stratified by type and synthesized thematically, covering aspects like anticoagulation monitoring and bleeding risks.

Subgroup analysis Given that this review employs a narrative synthesis rather than a quantitative Meta-analysis, traditional subgroup analyses based on statistical models are not applicable. Instead, we will explore potential heterogeneity by stratifying the included studies according to their study design, population characteristics, and specific intervention types during the thematic synthesis.

Sensitivity analysis Since no pooled effect estimates are generated, a formal statistical sensitivity analysis is not applicable. However, to ensure the robustness of our findings, we will conduct a descriptive sensitivity assessment by systematically excluding studies with a high risk of bias or low methodological quality to observe if the main themes of the synthesis change substantially.

Language restriction Only studies published in Chinese or English were included.

Country(ies) involved China.

Keywords Neonates; Extracorporeal Membrane Oxygenation; Anticoagulation; Hemorrhage; Thrombosis; Nursing; Scoping Review.

Contributions of each author

Author 1 - Zhang Jing - Study conception and design, data collection, and manuscript preparation.

Email: 1136533704@qq.com