INPLASY PROTOCOL

To cite: Phoophiboon et al. Effects of prone positioning on ARDS outcomes of trauma and surgical patients: A systematic review and meta-analysis. Inplasy protocol 202330102. doi: 10.37766/inplasy2023.3.0102

Received: 25 March 2023

Published: 25 March 2023

Corresponding author:
Natthida Owattanapanich

natthida.owa@gmail.com

Author Affiliation:
Faculty of Medicine Siriraj Hospital, Mahidol University.

Support: **None.**

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

Conflicts of interest:
None declared.

Effects of prone positioning on ARDS outcomes of trauma and surgical patients: A systematic review and meta-analysis

Phoophiboon, V[1]; Owattanapanich, N[2]; Owattanapanich, W[3]; Schellenberg, M[4].

Review question / Objective: **To determine the effect of prone positioning towards ARDS outcomes (P/F ratio - the ratio of arterial oxygen partial pressure to fractional inspired oxygen, mortality, ICU length of stay and mechanical ventilator day) among trauma and surgical patients.**
Condition being studied: **P/F ratio - the ratio of arterial oxygen partial pressure to fractional inspired oxygen, mortality, ICU length of stay and mechanical ventilator day. Eligibility criteria: We applied the following inclusion criteria: trials studying the prone position and acute respiratory distress syndrome and trauma-surgical patient and/or any study designs, any device, any methods. Exclusion criteria were as follows: case report, case series and ongoing trials. The outcome measures were P/F ratio, mortality, ICU length of stay and mechanical ventilator days.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 25 March 2023 and was last updated on 25 March 2023 (registration number INPLASY202330102).

INTRODUCTION

Review question / Objective: **To determine the effect of prone positioning towards ARDS outcomes (P/F ratio - the ratio of arterial oxygen partial pressure to fractional inspired oxygen, mortality, ICU length of stay and mechanical ventilator day) among trauma and surgical patients.**

Rationale: **Prone positioning is theoretically helpful in ARDS by increasing homogeneous ventilation distribution, modifying chest wall and lung compliance/ elastance, reducing ventilator-induced lung**

Phoophiboon et al. Inplasy protocol 202330102. doi:10.37766/inplasy2023.3.0102 Downloaded from https://inplasy.com/inplasy-2023-3-0102/

injury (VILI) and facilitating secretion mobilization and clearance.3 It must be noted that studies on the benefits of prone positioning in ARDS have been performed primarily among medical patients (79-89%), with surgical patients making up only 4-9% and trauma patients comprising only 2-7% of all patients examined.4,5 Because trauma and surgical patients may be at increased risk from position changes as compared to medical patients, it is possible that the balance of risks and benefits for prone positioning in ARDS are different in this specific subset of patients. However, there's the limited evidence of the use of prone positioning among ARDS patients specifically among trauma or surgical patients.

Condition being studied: P/F ratio - the ratio of arterial oxygen partial pressure to fractional inspired oxygen, mortality, ICU length of stay and mechanical ventilator day.

METHODS

Search strategy: MEDLINE, EMBASE, and the Cochrane database.

Participant or population: "trauma," "surgical," "acute respiratory failure".

Intervention: Pone position.

Comparator: Supine position.

Study designs to be included: All cohort studies.

Eligibility criteria: We applied the following inclusion criteria: trials studying the prone position and acute respiratory distress syndrome and trauma-surgical patient and/or any study designs, any device, any methods. Exclusion criteria were as follows: case report, case series and ongoing trials. The outcome measures were P/F ratio, mortality, ICU length of stay and mechanical ventilator days.

Information sources: Electronic systematic searches were conducted for articles published before November 30, 2022, using MEDLINE, EMBASE, and the Cochrane database.

Main outcome(s): The outcome measures were P/F ratio

Additional outcome(s): Mortality, ICU length of stay and mechanical ventilator days.

Data management: Data was managed using EndNote.

Quality assessment / Risk of bias analysis: Using the Cochrane risk-of bias tool for randomized trials (RoB 2) and the Risk Of Bias In Non-randomized Studies of Interventions (ROBINS-I) for non-randomised studies.

Strategy of data synthesis: All statistical analyses were performed using Review Manager 5.4.1 software.

Subgroup analysis: None.

Sensitivity analysis: None.

Language restriction: None.

Country(ies) involved: Thailand (Faculty of Medicine Siriraj Hospital, Mahidol University).

Keywords: Prone position, ARDS, surgical and trauma.

Dissemination plans: Publish in international journal.

Contributions of each author:

Author 1 - Vorakamol Phoophiboon.
Email: rakamol@hotmail.com
Author 2 - Natthida Owattanapanich.
Email: natthida.owa@gmail.com
Author 3 - Weerapat Owattanapanich.
Author 4 - Morgan Schellenberg.
Email: morgan.schellenberg@med.usc.edu

Phoophiboon et al. Inplasy protocol 202330102. doi:10.37766/inplasy2023.3.0102 Downloaded from https://inplasy.com/inplasy-2023-3-0102/