INPLASY PROTOCOL

To cite: Lin et al. Comparison of the clinical efficacy and safety of standard and ultrasound-assisted thrombolysis for pulmonary embolism. Inplasy protocol 202240082. doi: 10.37766/inplasy2022.4.0082

Received: 14 April 2022

Published: 14 April 2022

Corresponding author:
Po-Kai Yang

rivafann@gmail.com

Author Affiliation:
Division of cardiology, Department of Internal medicine, National Cheng Kung University Hospital, Dou-Liou Branch, College of Medicine, National Cheng Kung University, Yunlin, Taiwan.

Support: **National Cheng Kung University.**

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

Conflicts of interest:
None declared.

Comparison of the clinical efficacy and safety of standard and ultrasound-assisted thrombolysis for pulmonary embolism

Lin, J[1]; Chen, I[2]; Yang, P[3].

Review question / Objective: **To compare efficacy and safety of standard and ultrasound-assisted thrombolysis for patients with pulmonary embolism.**
Condition being studied: **Patient admitted for pulmonary embolism who received treatment with ultrasound-assisted thrombolysis or standard catheter-directed thrombolysis.**
Eligibility criteria: **All included trials had to include at least 1 USAT treatment arm and 1 SCDT. The target population was adults with acute PE. Single-armed follow-up studies, case series, and case reports are excluded.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 14 April 2022 and was last updated on 02 October 2022 (registration number INPLASY202240082).

INTRODUCTION

Review question / Objective: **To compare efficacy and safety of standard and ultrasound-assisted thrombolysis for patients with pulmonary embolism.**

Condition being studied: Patient admitted for pulmonary embolism who received treatment with ultrasound-assisted thrombolysis or standard catheter-directed thrombolysis.

METHODS

Participant or population: Patients with pulmonary embolism.

Intervention: Ultrasound-assisted thrombolysis(USAT).

Comparator: Standard Catheter-directed thrombolysis(SCDT).

Study designs to be included: Randomized-controlled trial and observational trials are included.

Eligibility criteria: All included trials had to include at least 1 USAT treatment arm and 1 SCDT. The target population was adults with acute PE. Single-armed follow-up studies, case series, and case reports are excluded.

Information sources: PubMed, Embase, Conchrane Central, and Web of Science.

Main outcome(s): Mortality, PA pressure change post treatment, RV/LV ratio, bleeding

Quality assessment / Risk of bias analysis: All eligible trials were evaluated by 2 reviewers independently using Cochrane risk of bias tool for randomized trials (version 2, RoB 2, London, United Kingdom). Newcastle-Ottawa quality assessment scale were used to evaluate the observational trials. Inter-reviewer conflicts were resolved through discussions under the supervision of the corresponding author.

Strategy of data synthesis: The mean difference (MD) with a 95% CI was calculated for continuous outcome variables. The odds ratio(OR) was calculated for categorical outcome variables, which included the major bleeding event rates and in-hospital mortality. A random effects model was used to pool individual mean differences and ORs; all analyses were performed using Comprehensive Meta-Analysis software (version 3; Biostat, Englewood, NJ, USA). Between-trial heterogeneity was determined by using I2 test. I2 values of 25, 50, and 75% were considered low, moderate, and high heterogeneity, respectively. Funnel plots were used to determine potential publication bias when datasets were less than ten and Egger's regression when ten or more datasets available. Statistical significance was defined as a p value < 0.05.

Subgroup analysis: Nil.

Sensitivity analysis: Nil.

Language: English.

Country(ies) involved: Taiwan.

Keywords: pulmonary embolism, ultrasound-assisted thrombolysis, EKOS, catheter-directedt hrombolysis.

Contributions of each author:
Author 1 - Jia-Ling Lin.
Author 2 - I-Yen Chen.
Author 3 - Po-Kai Yang.