

INPLASY PROTOCOL

To cite: Ma et al. A systematic review and meta-analysis about hemiarch versus total aortic arch replacement in acute type A aortic dissection. Inplasy protocol 202250088. doi: 10.37766/inplasy2022.5.0088

Received: 14 May 2022

Published: 14 May 2022

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**Review Stage at time of this
submission:** Preliminary
searches.

Conflicts of interest:
None declared.

A systematic review and meta-analysis about hemiarch versus total aortic arch replacement in acute type A aortic dissection

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Review question / Objective: Quantify the effects of hemiarch replacement on mortality and reoperation rate compared to total arch replacement in acute type A aortic dissection.

Condition being studied: Despite recent advances in aortic surgery, acute type A aortic dissection remains a surgical emergency associated with high mortality and morbidity. Appropriate management is crucial to achieve satisfactory outcomes but the optimal surgical approach is controversial.

Eligibility criteria: Patients diagnosed with Stanford type A aortic dissection by consultant's clinical judgment using local methods of diagnosis, which include clinical history, chest radiography (x-rays), transthoracic ultrasound, and contrast-enhanced computed tomography (CT), or magnetic resonance imaging (MRI) will be included. Patients are older than 18 years old, and patients eligible for AAD surgery will be included, as well.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 14 May 2022 and was last updated on 14 May 2022 (registration number INPLASY202250088).

INTRODUCTION

Review question / Objective: Quantify the effects of hemiarch replacement on mortality and reoperation rate compared to total arch replacement in acute type A aortic dissection.

Condition being studied: Despite recent advances in aortic surgery, acute type A aortic dissection remains a surgical emergency associated with high mortality and morbidity. Appropriate management is crucial to achieve satisfactory outcomes but the optimal surgical approach is controversial.

METHODS

Participant or population: Adult patients more than 18 years old presenting with acute type A aortic dissection.

Intervention: Hemiarch replacement.

Comparator: Total arch replacement.

Study designs to be included: Retrospective observational studies.

Eligibility criteria: Patients diagnosed with Stanford type A aortic dissection by consultant's clinical judgment using local methods of diagnosis, which include clinical history, chest radiography (x-rays), transthoracic ultrasound, and contrast-enhanced computed tomography (CT), or magnetic resonance imaging (MRI) will be included. Patients are older than 18 years old, and patients eligible for AAD surgery will be included, as well.

Information sources: Pubmed, Web of Science, Embase, Clinical Trials, Cochrane Central Register of Controlled, and Google academic.

Main outcome(s): Mortality.

Additional outcome(s): Reoperation rate, acute renal failure.

Quality assessment / Risk of bias analysis: Cochrane handbook for Systematic Reviews of Intervention, Newcastle-Ottawa Score.

Strategy of data synthesis: We will use Review Manager and Stata software to synthesise the data extracted. If the data extracted from the included studies are evaluated as highly homogeneous, we will conduct meta-analysis on them for the purpose of obtaining a clinically meaningful result.

Subgroup analysis: If there is substantial heterogeneity and the available data are sufficient, we will perform subgroup analysis for searching potential origins of heterogeneity.

Sensitivity analysis: We will conduct sensitivity analysis to evaluate the robustness and the reliability of aggregation results by eliminating trials with high bias risk. If reporting bias exists, we will use the methods of fill and trim to analyze publication bias.

Country(ies) involved: China.

Keywords: type A aortic dissection, hemiarch replacement, total arch replacement.

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