

INPLASY PROTOCOL

To cite: Tan. The efficacy and safety of insertable cardiac monitor on atrial fibrillation detection in patients with ischemic stroke: a systematic review and meta-analysis. Inplasy protocol 2021100108. doi: 10.37766/inplasy2021.10.0108

Received: 27 October 2021

Published: 27 October 2021

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Support: GSWS2019002.

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

Conflicts of interest:
None declared.

The efficacy and safety of insertable cardiac monitor on atrial fibrillation detection in patients with ischemic stroke: a systematic review and meta-analysis

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Review question / Objective: The objective of this systematic review was to evaluate the efficacy and safety of the ICM in AF detection of patients with stroke.

Condition being studied: Atrial fibrillation (AF) confers a high risk of recurrent stroke, and the insertable cardiac monitor (ICM), as a new kind of electrocardiographic monitoring, has been proved to enhance the recognition ability of AF. The objective of this systematic review was to evaluate the efficacy and safety of the ICM in AF detection of patients with stroke. Currently, there is few systematic analysis of ICM on AF detection in patients with ischemic stroke. Additionally, more sufficient evidence is needed for clinicians to support clinical decision-making for patients with ischemic stroke.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 27 October 2021 and was last updated on 27 October 2021 (registration number INPLASY2021100108).

INTRODUCTION

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METHODS

Participant or population: Adult patients had received a diagnosis of ischemic stroke or transient ischemic attack (TIA).

Intervention: Insertable cardiac monitor.

Comparator: Corresponding control.

Study designs to be included: We pooled data from previous randomized controlled trials (RCTs) and conducted a systematic review and meta-analysis to investigate the efficacy and safety of ICM on AF detection in ischemic stroke patients.

Eligibility criteria: We set the inclusion criteria as follows: (1) study type: RCT; (2) language restriction: only available in English; (3) participants: adult patients had received a diagnosis of ischemic stroke or transient ischemic attack (TIA); (4) intervention: ICM and conventional external cardiac monitoring; (5) outcomes: efficacy outcomes including patients detection of AF at 6 months, patients detection of AF at 12 months, the time to detection of AF, recurrent ischemic stroke or TIA and use of oral anticoagulants; safety outcomes including adverse events (AEs). Included RCTs were not requested to supply all the outcomes mentioned above.

Information sources: MEDLINE, EMBASE, CENTRAL and the ClinicalTrials.gov .

Main outcome(s): Efficacy outcomes including patients detection of AF at 6 months, patients detection of AF at 12 months, the time to detection of AF, recurrent ischemic stroke or TIA and use of oral anticoagulants; safety outcomes including adverse events (AEs).

Quality assessment / Risk of bias analysis:

The risk of bias plot was evaluated with the Review Manager 5.3 software. The uniform criteria of the Cochrane Collaboration was used to assess the risk of bias for RCTs, which included: selection bias, performance bias, detection bias, attrition bias, reporting bias, and other potential biases. Each bias criterion was classified as “low”, “high”, or “unclear”.

Strategy of data synthesis: Review Manager 5.3 software was used to assess the data. For the dichotomous outcomes, the risk ratio (relative risk [RR]; 95% confidence interval [CI]) was analyzed and calculated with a random effect model. Mean difference (MD) was used only for the continuous outcome the time to detection of AF. Heterogeneity was estimated via the I² statistic, which was as follows: I² < 30% suggests “low heterogeneity”; I² between 30% and 50% means “moderate heterogeneity”; I² > 50% denotes “substantial heterogeneity”. Sensitivity analysis was used to explore the stability of the consolidated results. For all the analyses, two tailed tests were performed and a P value < 0.05 was considered to be statistically significant.

Subgroup analysis: Not applicable.

Sensitivity analysis: Sensitivity analysis was used to explore the stability of the consolidated results.

Country(ies) involved: China.

Keywords: atrial fibrillation, cardiac monitoring, insertable cardiac monitor, ischemic stroke, systematic review

Contributions of each author:

Author 1 - Xin Tan.