INPLASY PROTOCOL

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None.

Compression methods after femoral artery puncture: a protocol for systematic review and network meta-analysis

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Review question / Objective: **To evaluate the effectiveness and safety of different compression methods after femoral artery puncture.**
Condition being studied: **Vascular complications at the puncture site is a common complication after femoral artery puncture. It will not only affect the postoperative effect and patient comfort, but also may endanger the life of the patient. The effective compression hemostasis methods at the puncture site can improve the comfort of the patient, shorten the hospital stay, and reduce the burden on the medical staff.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 18 December 2020 and was last updated on 18 December 2020 (registration number INPLASY2020120094).

INTRODUCTION

Review question / Objective: **To evaluate the effectiveness and safety of different compression methods after femoral artery puncture.**

Condition being studied: **Vascular complications at the puncture site is a common complication after femoral artery puncture. It will not only affect the postoperative effect and patient comfort, but also may endanger the life of the patient. The effective compression**

hemostasis methods at the puncture site can improve the comfort of the patient, shorten the hospital stay, and reduce the burden on the medical staff.

METHODS

Search strategy: The search terms will include "femoral artery", "punctures","compress". The following sources will be searched: PubMed, Embase, Web of Science, Cochrane Library, CNKI Database, VIP, Wanfang Database, and China Biomedical Database to identify relevant trials. We will also search major trials registries for unpublished data, including the WHO International Clinical Trials Registry Platform (WHO ICTRP), Clinical Trials. gov, Cochrane Central Register of Controlled Trials (CENTRAL).

Participant or population: We will include all patients undergoing femoral artery puncture, regardless of their disease.

Intervention: For interventions, manual compression, bandages, sandbags, compression tourniquets, compression balloons, arterial compressors, etc. are included.

Comparator: In terms of control conditions, hemostatic dressing, vascular suture device, etc.will be included.

Study designs to be included: Any relevant randomized controlled trials (RCTs) will be included.

Eligibility criteria: The eligibility criteria will be the following:1. Types of study: Randomized controlled trials (RCTs). 2. Participants: all patients undergoing femoral artery puncture, regardless of their disease.3.Interventions:For interventions, manual compression, bandages, sandbags, compression tourniquets, compression balloons, arterial compressors, etc. are included.

Information sources: We will systematically search PubMed, Embase, Web of Science, Cochrane Library, CNKI Database, VIP, Wanfang Database, and China Biomedical Database to identify relevant trials. We will also search major trials registries for unpublished data, including the WHO International Clinical Trials Registry Platform (WHO ICTRP), Clinical Trials. gov, Cochrane Central Register of Controlled Trials (CENTRAL). In addition, we will track the references contained in the literature and search for other related studies through search engines (such as Google).

Main outcome(s): Effectiveness includes time-to-hemostasis (TTH),limb braking time; Safety includes the incidence of various complications, mainly hematoma, vagus nerve reflex, pseudoaneurysm, puncture site infection, and subcutaneous oozing, etc.

Quality assessment / Risk of bias analysis: Evaluate the methodological quality of RCTs according to the Cochrane Bias Risk Assessment Tool (Cochrane Intervention Manual for Systematic Review). The tool consists of 6 domains: sequence generation, allocation concealment, blinding of participants and personnel, blinding of outcome assessors, incomplete outcome data and selective outcome reporting and other sources of bias.We will evaluate methodological quality as 'low risk', 'unclear risk' or 'high risk'. The assessment process is carried out by two reviewers independently, and a third investigator will resolve any differences.

Strategy of data synthesis: We will use the random effect model of Stata (V.15.0) to conduct a paired meta-analysis of direct evidence.Using the Markov Chain Monte Carlo in WinBUGS (V.1.4.3) to perform random effects network meta-analysis within the Bayesian framework.

Subgroup analysis: If statistical heterogeneity is evident, we will analyze the causes of heterogeneity, if there is enough data.

Sensibility analysis: We will conduct sensitivity analysis by excluding low-quality studies and trials with imputed missing data.

Language: English.

Country(ies) involved: China.

Keywords: compression, femoral artery puncture, network meta-analysis.

Contributions of each author:
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