INPLASY PROTOCOL

To cite: Zhang et al. Comparison of drug-coated balloon angioplasty versus common balloon angioplasty for arteriovenous fistula stenosis: a Meta-analysis. Inplasy protocol 202280112. doi: 10.37766/inplasy2022.8.0112

Received: 31 August 2022

Published: 31 August 2022

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Support: **NA.**

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

Conflicts of interest:
None declared.

Comparison of drug-coated balloon angioplasty versus common balloon angioplasty for arteriovenous fistula stenosis: a Meta-analysis

Zhang, Y[1]; Gou, WJ[2].

Review question / Objective: **Comparison of drug-coated balloon angioplasty versus common balloon angioplasty for arteriovenous fistula stenosis. A total of 22 RCTs were included in this Meta-analysis. The results showed that DCB group had higher first -stage patency rate of the target lesion in 6 months and 12 months after surgery, and the difference was statistically significant. And there was no statistically significant difference in all-cause mortality of two groups in 6 months and 12 months.**
Condition being studied: **Drug-coated Balloon (DCB) has been used in dialysis patients with arteriovenous fistula stenosis, but whether it has advantages over ordinary balloon is still controversial. A meta-analysis was designed to investigate the safety and efficacy of DCB and common balloon (CB) in the treatment of AVF stenosis.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 31 August 2022 and was last updated on 31 August 2022 (registration number INPLASY202280112).

INTRODUCTION

Review question / Objective: **Comparison of drug-coated balloon angioplasty versus common balloon angioplasty for arteriovenous fistula stenosis. A total of 22 RCTs were included in this Meta-analysis. The results showed that DCB group had higher first -stage patency rate of the target lesion in 6 months and 12 months after surgery, and the difference was statistically significant. And there was no statistically significant difference in all-cause mortality of two groups in 6 months and 12 months.**

Condition being studied: **Drug-coated Balloon (DCB) has been used in dialysis**

patients with arteriovenous fistula stenosis, but whether it has advantages over ordinary balloon is still controversial. A meta-analysis was designed to investigate the safety and efficacy of DCB and common balloon (CB) in the treatment of AVF stenosis.

METHODS

Participant or population: Hemodialysis patients.

Intervention: Percutaneous transluminal angioplasty.

Comparator: Common balloon (CB) in the treatment of AVF stenosis.common balloon.

Study designs to be included: RCTs.

Eligibility criteria: Children, pregnant women, and patients with a history of kidney transplantation were excluded.

Information sources: PubMed, Embase, and CNKIdatabases.

Main outcome(s): All-cause mortality at 6 months. All-cause mortality at 12 months. Primary patency rate of target lesion at 6 months after operation. Primary patency rate of target lesion at 12 months after operation.

Quality assessment / Risk of bias analysis: Two authors (ZY and GWJ) independently carried out the primary review to search for trials that met the inclusion criteria . Any discrepancy was resolved by discussion and consensus.

Strategy of data synthesis: STATA 16.0 (Stata Corp LP, College Station, TX, USA) was used to perform statistical analyses. Labbe plot and meta-regression were used for intuitive judgment of heterogeneity. For remaining circumstances, a random effect model was used for pooling the effect size to calculate for statistical heterogeneity. Heterogeneity was analyzed by I2 and χ2 statistics. If there was significant heterogeneity, a sensitivity analysis and subgroup analysis was conducted to evaluate the consistency and quality of the results. Publication bias was evaluated using Begg's and Egger's tests.

Subgroup analysis: STATA 16.0 (Stata Corp LP, College Station, TX, USA) was used to perform statistical analyses. Labbe plot and meta-regression were used for intuitive judgment of heterogeneity. For remaining circumstances, a random effect model was used for pooling the effect size to calculate for statistical heterogeneity. Heterogeneity was analyzed by I2 and χ2 statistics. If there was significant heterogeneity, a sensitivity analysis and subgroup analysis was conducted to evaluate the consistency and quality of the results. Publication bias was evaluated using Begg's and Egger's tests.Yes.

Sensitivity analysis: STATA 16.0 (Stata Corp LP, College Station, TX, USA) was used to perform statistical analyses. Labbe plot and meta-regression were used for intuitive judgment of heterogeneity. For remaining circumstances, a random effect model was used for pooling the effect size to calculate for statistical heterogeneity. Heterogeneity was analyzed by I2 and χ2 statistics. If there was significant heterogeneity, a sensitivity analysis and subgroup analysis was conducted to evaluate the consistency and quality of the results. Publication bias was evaluated using Begg's and Egger's tests.

Country(ies) involved: China.

Keywords: Drug-coated balloon; Common balloon angioplasty; Arteriovenous fistula; Stenosis; End-stage renal disease; All-cause mortality; Meta-analysis.

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