

INPLASY PROTOCOL

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None declared.

Risk prediction model for ISR after coronary stenting-a systematic review and meta-analysis

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Review question / Objective: The efficacy of risk prediction model for ISR.

Condition being studied: Coronary heart disease (CHD), with high morbidity and high mortality rate, is still a serious public health concern around the world. PCI is fast becoming a key instrument in revascularization for patients with CHD, as well as an important technology in the management of CHD patients.¹ Although the clinical application of coronary stents brought about a dramatic improvement in patients' clinical and procedural outcomes, the mid-and long-term outcome of stent implantation remains significantly hampered by the risk of developing ISR with a prevalence rate of 3–20% over time. Predictive models have the advantage of formally combining risk factors to allow more accurate risk estimation. And it is essential to establish a model to predict ISR in patients with CAD and drug-eluting stents (DESs) implantation. However, predictive model performance needs further evaluation.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 05 April 2023 and was last updated on 05 April 2023 (registration number INPLASY202340014).

INTRODUCTION

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METHODS

Search strategy: We will retrieve articles from the following databases: PubMed, Embase, Web of Science, The Cochrane Library, the Chinese National Knowledge Infrastructure, The Chinese Medicine Database and the China Science and Technology Journal Database, Wanfang, Chongqing VIP information. We will also undertake a targeted gray literature search on ClinicalTrials.gov and the International Clinical Trials Registry Platform search portal to identify in-progress and completed trials. We anticipate that the databases will be searched from their respective dates of inception to December 2022.

Participant or population: Post-stenting patients with coronary artery disease.

Intervention: Risk prediction model for ISR.

Comparator: Different prediction models.

Study designs to be included: Prediction models.

Eligibility criteria: We included all primary articles that reported one or more multivariable prediction models or scores that have been suggested for individual risk estimation of ISR.

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Main outcome(s): In-stent restenosis.

Quality assessment / Risk of bias analysis: Cochrane risk assessment tool was used to evaluate the quality of studies. Q test and I² statistic were used to estimate the heterogeneity of the pooled data.

Strategy of data synthesis: The meta-analysis is performed by Review Manager 5.3 software (Cochrane Collaboration, Oxford, UK). For outcome measures, dichotomous variables are presented as risk ratio (RR) with 95% confidence intervals (CI), while continuous outcomes are expressed as mean difference (MD) with 95% CI. As a quantitative measure of inconsistency, the I² (I²) statistic is used to assess heterogeneity. Fixed effect model is performed with minor heterogeneity when I² was less than 50%. Random effect model is applied when I² was over 50%. Publication bias is explored applying a funnel plot analysis if more than 10 trials are identified.

Subgroup analysis: Subgroup analyses will be done for different outcome measures if the necessary data are available.

Sensitivity analysis: We investigated the heterogeneity among the included studies through sensitivity analysis. Several prespecified sensitivity analyses were performed in which we investigated the influence of risk of bias and case-mix difference (e.g. ethnic group, age range and alternative estimated OE methods) on our findings.

Language restriction: English and Chinese.

Country(ies) involved: China.

Keywords: Coronary artery disease; stenting; in-stent restenosis; predictive model.

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