INPLASY PROTOCOL

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Conflicts of interest:
The authors declare that they have no conflicts of interests.

Effect of prediabetes on the long-term all-cause mortality of patients undergoing percutaneous coronary intervention: a protocol for systematic review and meta analysis

Shi, R[1]; Diao, KY[2]; Shi, K[3]; Gao, Y[4]; Huang, S[5]; Guo, YK[6]; Yang, ZG[7].

Review question / Objective: Specify the impact of prediabetes on long-term outcomes after percutaneous coronary intervention.

Condition being studied: Prior to the progression to diabetes, some patients experience long-term glycometabolic abnormalities, which is an intermediate status with borderline high plasma glucose levels, referred to as prediabetes]. Prediabetes, including impaired glucose tolerance (IGT), impaired fasting glucose (IFG-WHO: 6.1-6.9 mmol/L or IFG-ADA: 5.6-6.9 mmol/L) and elevated HbA1c (HbA1c-ADA: 39-47 mmol/mol or HbA1c-NICE: 42-47 mmol/mol)[3,4], is also one of the most common comorbid states of coronary artery disease (CAD).

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 21 June 2020 and was last updated on 21 June 2020 (registration number INPLASY202060079).

INTRODUCTION

Review question / Objective: Specify the impact of prediabetes on long-term outcomes after percutaneous coronary intervention.

Rationale: Prediabetes is an abnormal metabolic state that develops prior to the onset of diabetes with proven to common comorbid states of coronary artery disease (CAD). However, whether prediabetes worsens prognosis after percutaneous coronary intervention (PCI) remains controversial.

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(IFG-WHO: 6.1-6.9 mmol/L or IFG-ADA: 5.6-6.9 mmol/L) and elevated HbA1c (HbA1c-ADA: 39-47 mmol/mol or HbA1c-NICE: 42-47 mmol/mol)[3,4], is also one of the most common comorbid states of coronary artery disease (CAD).

METHODS

Search strategy: Embase, Pubmed, and Google scholar were comprehensively searched up to the 1st September 2019, and supplemented with manual searches of the included reference lists to identify cohort studies. Search strategies were developed and reviewed by two experienced librarian investigators. Any discrepancy was resolved by consensus.

Participant or population: Prediabetes defined as impaired fasting glucose (IFG-WHO: 6.1-6.9 mmol/L or IFG-ADA: 5.6-6.9 mmol/L), impaired glucose tolerance (2 h plasma glucose 7.8-11.0 mmol/L during an oral glucose tolerance test), or raised HbA1c (HbA1c-ADA: 39-47 mmol/mol or HbA1c-NICE: 42-47 mmol/mol).

Intervention: Prediabetes, including impaired glucose tolerance (IGT), impaired fasting glucose and elevated HbA1c, is an intermediate status with borderline high plasma glucose level. It is accepted that prediabetes is one of a common comorbid states of coronary artery disease.

Comparator: Non-exposed control group (normal blood glucose patients who undergo PCI)

Study designs to be included: Retrospective or prospective cohort study

Eligibility criteria: All the research objects in these studies were completed percutaneous coronary intervention (no matter selective or primary) in hospitalization. Studies with prediabetes defined as impaired fasting glucose (IFG-WHO: 6.1-6.9 mmol/L or IFG-ADA: 5.6-6.9 mmol/L), impaired glucose tolerance (2 h plasma glucose 7.8-11.0 mmol/L during an oral glucose tolerance test), or raised HbA1c (HbA1c-ADA: 39-47 mmol/mol or

HbA1c-NICE: 42-47 mmol/mol) will be eligible for inclusion.

Information sources: Pubmed, embase and google scholar, manual searches of the included reference lists.

Main outcome(s): Myocardial infraction, MACE and all-cause mortality.

Quality assessment / Risk of bias analysis: Quality assessment of the included studies will be performed using the Newcastle-Ottawa quality assessment scale (NOS).

Strategy of data synthesis: Statistical analyses were performed with Stata Version 15.0 (StataCorpLP, College Station, TX, USA). Adjusted HRs with 95% CIs for long-term adverse events, including all-cause mortality, MI or MACE in PCI-treated CAD patients, are extracted and polled.

Subgroup analysis: The diagnostic criteria of prediabetes are the strongest confounder of long-term outcomes after PCI, and considered as a potential source of heterogeneity. We plan to perform a further subgroup analyses of the outcomes according to the prediabetes diagnosis (IFG, IGT or HbAc1).

Sensibility analysis: Sensitivity analysis was performed by recalculating the pooled relative risk following the omission of single studies in a step-wise manner.

Country(ies) involved: China.

Keywords: prediabetes, percutaneous coronary intervention, Metabolic abnormality.

Contributions of each author:
Author 1 - Rui Shi - conceived this study, developed the study protocol and will implement the systematic review.
Author 2 - KY Diao.
Author 3 - K Shi.
Author 4 - Y Gao.
Author 5 - S Huang.
Author 6 - YK Guo.
Author 7 - ZG Yang.