INPLASY PROTOCOL

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Corresponding author:
Xiaoling Guan

gxlwho@163.com

Author Affiliation:
The First Affiliated Hospital of Shandong First Medical University & Shandong Provincial Qianfoshan Hospital

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None declared.

The correlation between serum microRNA-21 and diabetic kidney disease: A meta-analysis of case-control studies

Guan, X[1]; Cui, Y[2]; Wang, H[3]; Wang, T[4]; Yao, J[5]; Tian, Y[6]; Liao, L[7]; Dong, J[8].

Review question / Objective: **To assess the relationship between the level of serum microRNA-21 and diabetic kidneydisease.**
Condition being studied: **Diabetes mellitus (DM) is a chronic metabolic syndrome that seriously affects human health worldwide. From 2005 to 2015, the number of deaths caused by diabetes rose from 1.2 million to 1.5 million each year, and its main reason for death is vascular complications. Diabetic kidney disease (DKD)is the most common vascular complication. The pathological changes of DKD include glomerular sclerosis and tubular interstitial fibrosis, which can eventually lead to renal fibrosis. It is conceivable that prevention and early diagnosis are particularly important in the diagnosis and treatment of DKD. MicroRNA-21 (miR-21) plays a key role in the pathogenesis of diabetes and related complications. As the attention to miR-21 increases, there has been a lot of controversy regarding its role in DKD. Some studies believe that the serum miR-21 level of patients with diabetic kidney disease is lower than that of healthy people. However, some studies believe that the level of serum miR-21 is higher in patients with DKD. Consequently, there is a lack of comprehensive and up-to-date research to illustrate the role of miR-21 in DKD.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 17 November 2021 and was last updated on 17 November 2021 (registration number INPLASY2021110060).

INTRODUCTION

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caused by diabetes rose from 1.2 million to 1.5 million each year, and its main reason for death is vascular complications. Diabetic kidney disease (DKD)is the most common vascular complication. The pathological changes of DKD include glomerular sclerosis and tubular interstitial fibrosis, which can eventually lead to renal fibrosis. It is conceivable that prevention and early diagnosis are particularly important in the diagnosis and treatment of DKD. MicroRNA-21 (miR-21) plays a key role in the pathogenesis of diabetes and related complications. As the attention to miR-21 increases, there has been a lot of controversy regarding its role in DKD. Some studies believe that the serum miR-21 level of patients with diabetic kidney disease is lower than that of healthy people. However, some studies believe that the level of serum miR-21 is higher in patients with DKD. Consequently, there is a lack of comprehensive and up-to-date research to illustrate the role of miR-21 in DKD.

METHODS

Participant or population: Patients with TDM.

Intervention: DKD.

Comparator: without DKD.

Study designs to be included: Clinical controlled trials.

Eligibility criteria: (1) clinical controlled trials; (2) prospective cohort studies; (3) end outcome was the level of serum miR-21; (4) patients with DKD in the experimental group; (5) trials were complete; (6) the literature reported enough data to calculate mean difference.

Information sources: PubMed, Cochrane Library, SinoMed.

Main outcome(s): The expression level of the patient's miR-21.

Quality assessment / Risk of bias analysis: All qualified investigation was performed by Xiaoling Guan and Yuying Cui according to the Newcastle-Ottawa Scale (NOS). Any disagreement was resolved by the adjudicating senior authors. Two reviewers extracted the data independently using a predefined data extraction form. Disagreements were resolved by discussion or consensus with a third reviewer. All data are comprehensively presented in Table 1, including the first author, countries, source of cases, mean age, outcome index, sample size, sex ratio, and so on.

Strategy of data synthesis: All analyses were performed using the Review Manager version 5.3 software. The effect size is represented by "SMD". The random-effects model was applied for the present meta-analysis in terms of the heterogeneity among all studies.

Subgroup analysis: None.

Sensitivity analysis: In this study, sensitivity analysis was performed to examine the effect of a single study on the combined effect by removing the individual survey. If the estimated value of the point after deleting a study fell beyond the 95% CI of the total effect amount (or was significantly different from the combined effect amount), we considered the study in question to have exerted a great influence on the combined effect amount; and that this study required a further review.

Country(ies) involved: China.

Keywords: microRNA-21, diabetic kidney disease, DKD, diabetes mellitus, meta-analysis.

Contributions of each author:
Author 1 - Xiaoling Guan.
Author 2 - Yuying Cui.
Author 3 - Huanjun Wang.
Author 4 - Tingting Wang.
Author 5 - Jinming Yao.
Author 6 - Yutian Tian.
Author 7 - Lin Liao.
Author 8 - Jianjun Dong.