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Thallium exposure and gestational diabetes mellitus：a systematic review and meta-analysis

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ADMINISTRATIVE INFORMATION

Support - The authors received no funding to perform this study.

Review Stage at time of this submission - Preliminary searches.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 22 July 2025 and was last updated on 22 July 2025.

INTRODUCTION

Review question / Objective Systematic review of the relationship between Thallium (Tl) exposure and gestational diabetes mellitus (GDM).

Condition being studied Thallium (Tl) exposure have been suggested to be involved in the pathogenesis of gestational diabetes mellitus (GDM). However, the Association between Tl exposure and GDM in pregnant women remains undetermined. Therefore, we conducted a meta-analysis of Tl exposure and GDM.

METHODS

Participant or population Patients with gestational diabetes.

Intervention High Tl level.

Comparator Low Tl level.

Study designs to be included Observational study design.

Eligibility criteria The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) standards were followed in conducting this meta-analysis.

Information sources PubMed, Web of Science, Wang fang and CNKI databases.

Main outcome(s) The current meta-analysis suggests that Tl exposure is not associated with the development of GDM. Future prospective studies are needed to verify the relationship between Tl exposure and GDM.

Quality assessment / Risk of bias analysis NOS.

Strategy of data synthesis The assessment encompassed the association between Tl levels and GDM, employing the amalgamation of odds ratios (OR) accompanied by 95% confidence intervals (95% CI).

Subgroup analysis Asubgroup analysis was executed to explore potential origins of the observed heterogeneit.

Sensitivity analysis Begg's test.

Country(ies) involved China.

Keywords Thallium· GDM· Pregnant women· Meta-analysis.

Contributions of each author
Author 1 - Liu Hezuo.
Author 2 - Hong Yun.