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Correlation between omentin-1 and coronary artery disease: a Systematic and Meta-analysis

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ADMINISTRATIVE INFORMATION

Support - Not applicable.

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

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 08 July 2023 and was last updated on 08 July 2023.

INTRODUCTION

Review question / Objective The relationship between omentin-1 and the development of coronary artery disease (CAD) remains controversial. This meta-analysis explores omentin-1 by summarizing current articles on its association with the development of CAD.

Rationale PubMed, Embase, Web of Science databases were electronically searched on the association between omentin-1 and CAD from inception to May, 2023. Literatures that reported the relationship between omentin levels and the risk of CAD were included. Duplicate publications, no full-text studies, studies with insufficient information, or data extraction could not be performed, the definition of exposure was significantly different from most literatures, animal experiments, reviews and systematic reviews were excluded.

Condition being studied The relationship between omentin-1 and the development of coronary artery

disease (CAD) remains controversial. This meta-analysis explores omentin-1 by summarizing current articles on its association with the development of CAD.

METHODS

Search strategy In this meta-analysis, we searched Pubmed, Embase, Cochrane Library from establishment of the database to May, 2023. The search terms are as follows: (("Coronary Artery Disease"[Mesh]) OR (((((((((Coronary Artery Diseases) OR (Left Main Coronary Artery Disease)) OR (Left Main Disease)) OR (Left Main Diseases)) OR (Left Main Coronary Disease)) OR (Coronary Arteriosclerosis)) OR (Coronary Arterioscleroses)) OR (Coronary Atheroscleroses)) OR (Coronary Atherosclerosis))) AND (Omentin-1).

Participant or population Patients with coronary artery disease.

Intervention Not applicable.

Comparator Not applicable.

Study designs to be included Observational study.

Eligibility criteria Inclusion criteria: The study type is observational study; Patients with coronary artery disease; The sample size is more than 10 cases; Research on the level of omentin-1 in patients with coronary artery disease (CAD) and healthy people Exclusion criteria: repeated publication; studies without full text, incomplete information or inability to conduct data extraction; animal experiments; reviews and systematic reviews.

Information sources In this meta-analysis, we searched Pubmed, Embase, Cochrane Library.

Main outcome(s) Levels of omentin-1 and the between omentin-1 and CAD.

Additional outcome(s) Due to the heterogeneity of the analysis of omentin-1 levels. We continue to perform subgroup analyses for different sample sources and different regions.

Data management Two researchers independently carried out literature search, screening and information extraction. When a question or dispute arises, a decision is made after discussion or negotiation with a third person. The data extraction included the author, publication year of articles, country, study design, sample size, sex, age, BMI, sample source and outcomes including levels of omentin-1 and the between omentin-1 and CAD.

Quality assessment / Risk of bias analysis Two researchers independently used the Newcastle-Ottawa Scale (NOS) to evaluate the quality of the literature, and any disagreements were resolved through consultation or third-party opinion. NOS includes 4 items (4 points) for "subject selection", 1 item (2 points) for "comparability between groups" and 3 items (3 points) for "outcome measurement", with a full score of 9 points and ≥ 7 points High-quality literature, < 7 is classified as low-quality literature.

Strategy of data synthesis All data analyzed by STATA 15.1 (Stata Corp, College Station, TX) [12]. For continuous variables, standardized mean difference (SMD) (95%CI) combined effect size was used, and OR (95%CI) was used for risk factor assessment. I² and Q test were used to evaluate heterogeneity. If the heterogeneity test is $P \geq 0.1$ and $I^2 \leq 50\%$, it indicates that there is homogeneity

between studies, and the fixed effects model is used for combined analysis; if $P < 0.05$, it indicates that there is heterogeneity and sensitivity analysis was used to find the source of heterogeneity. If the heterogeneity is still large, use the random effects model or give up the combination of results and use descriptive analysis. Funnel plot and Egger's test was used to assess the publication bias.

Subgroup analysis Due to the heterogeneity of the analysis of omentin-1 levels. We continue to perform subgroup analyses for different sample sources and different regions.

Sensitivity analysis We conducted a sensitivity analysis by eliminating each included study individually and performing a summary analysis of the remaining studies.

Language restriction No.

Country(ies) involved China - Changshu Hospital Affiliated to Soochow University.

Keywords Omentin; Coronary artery disease; CAD; Risk factor; Systematic and Meta-analysis.

Contributions of each author

Author 1 - Yijing Tao - Author 1 drafted the manuscript.

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Author 2 - Bo Liu - The author provided statistical expertise.

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