INPLASY PROTOCOL

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None declared.

Advances in highly active one-carbon metabolism in cancer diagnosis, treatment, and drug resistance: a systematic review

Liu, S[1]; Wang, Z[2]; Lv, D[3]; Zhao, Y[4].

Review question / Objective: **To unmask the recent developments concerning highly active 1C metabolism with regard to cancer diagnosis, treatment, and drug resistance.**
Condition being studied: **Cancer diagnosis, treatment, and drug resistance.**
Eligibility criteria: **Studies with patients who have been subjected to the recently-developed aspects of one-carbon metabolism in cancer diagnosis, treatment and participants who reported drug resistance.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 20 November 2022 and was last updated on 20 November 2022 (registration number INPLASY2022110099).

INTRODUCTION

Review question / Objective: **To unmask the recent developments concerning highly active 1C metabolism with regard to cancer diagnosis, treatment, and drug resistance.**

Condition being studied: **Cancer diagnosis, treatment, and drug resistance.**

METHODS

Participant or population: **Patients who have been subjected to the recently-developed aspects of one-carbon metabolism in cancer diagnosis, treatment and participants who reported drug resistance.**

Intervention: One-carbon.

Comparator: Standard care or no care.

Study designs to be included: All forms of outcomes related to one-carbon metabolism in cancer diagnosis, treatment, and drug resistance.

Eligibility criteria: Studies with patients who have been subjected to the recently-developed aspects of one-carbon metabolism in cancer diagnosis, treatment and participants who reported drug resistance.

Information sources: EMBASE, Web of Science, PubMed, Google Scholar, and Scopus Review.

Main outcome(s): The review found that metabolites like folic acid could be used to detect different types of cancer. The metabolic pathways could induce tumorigenesis and DNA methylation, hence drug resistance.

Quality assessment / Risk of bias analysis: The risk of biases from RCTs was assessed, through The Grading of Recommendations Assessment, Development, and Evaluation (GRADE) approach, in seven domains: Adequate Sequence Generation, Allocation Concealment, Blinding of Participants and Personnel, Blinding of Outcome Assessment, Incomplete Outcome Data, Selective Outcome Reporting, and Other Bias.

Strategy of data synthesis: N/A.

Subgroup analysis: N/A.

Sensitivity analysis: N/A.

Country(ies) involved: China.

Keywords: Chemotherapy, folate cycle, randomized-controlled trials, DNA methylation, methionine cycle.

Contributions of each author:
Author 1 - Shuang Liu.
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