INPLASY PROTOCOL

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None declared.

Clinical usefulness of serum CA50 in pancreatic cancer diagnosis: meta-analysis and systematic review of literature

Zhu, L[1].

Review question / Objective: **Our objective was to obtain summary estimates of the accuracy of carbohydrate antigen 50 for diagnosing pancreatic cancer using randomized controlled trials.**
Condition being studied: **Pancreatic cancer.**
Information sources: **PubMed, EMBASE, Cochrane Library, Web of science.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 22 April 2022 and was last updated on 22 April 2022 (registration number INPLASY202240138).

INTRODUCTION

Review question / Objective: **Our objective was to obtain summary estimates of the accuracy of carbohydrate antigen 50 for diagnosing pancreatic cancer using randomized controlled trials.**

Condition being studied: **Pancreatic cancer.**

METHODS

Participant or population: **Pancreatic cancer patients.**

Intervention: **The test of carbohydrate antigen 50 in pancreas of pancreatic cancer.**

Comparator: **The test of carbohydrate antigen 50 in pancreas of non-pancreatic cancer.**

Study designs to be included: **RCT.**

Eligibility criteria: **Pathological investigation.**

Information sources: PubMed, EMBASE, Cochrane Library, Web of science.

Main outcome(s): Sensitivity (SEN), specificity (SPE), positive likelihood ratio(PLR), negative likelihood ratio (NLR), diagnostic odds ratio (DOR) and area under the curve (AUC).

Quality assessment / Risk of bias analysis: The quality of all studies was assessed independently by two investigators with QUADAS-2 (Quality Assessment of Diagnostic Accuracy Studies 2). The included literature is scored by 14 criteria, and each item is scored with "yes" plus 1 point, "no" minus 1 point, and "unclear" as 0 points. Disagreements were resolved through discussion and, when necessary, by consultation with a third author.Cochrane tools.

Strategy of data synthesis: Inconsistency statistic (I2) was calculated to evaluate level of heterogeneity by Stata (0%-30%: homogeneity; 30%-50%: moderate heterogeneity; 50%-80%: substantial heterogeneity; >80%: considerable heterogeneity). And if no or moderate heterogeneity (I2 < 50% or P >0.05), the fixed-effect model was applied; if not, the random-effects model.The diagnostic value of CA50 for PC was evaluated by calculating the following items: sensitivity, specificity, PLR,NLR, DOR , the corresponding 95% CI, summary receiveroperator characteristic (SROCs) curves and the pooled AUC values. Then the spearman correlation coefficient was calculated by metadisc1.40 software to evaluate the causes of heterogeneity: P > 0.05, which means no threshold effect, and all indicators can be combined; P < 0.05, which means threshold effect, and the indicators can not be combined, but briefly described. Subsequently,the sources of heterogeneity were analyzed by meta-regression and subgroup analysis. the robustness and reliability of the selected literatures were analyzed by sensitivity analysis. Finally, the Deek funnel plot was used to assesse the publication bias, and P < 0.05 means statistically significant differences.

Subgroup analysis: Based on the results of meta regression analysis, factors that might cause heterogeneity: method, race, control, and sample were conducted subgroup analysis to determine the impact of CA50 on the diagnostic value of PC.

Sensitivity analysis: In order to examine the influence of individual studies on the stability of the results, after excluding the studies in turn, the combined effect size was re-estimated and compared with before.

Country(ies) involved: China.

Keywords: CA50; pancreatic cancer; biomarkers; diagnosis; meta analysis.

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