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Prognostic and clinicopathological significance of C-reactive protein in patients with ovarian cancer: a meta-analysis

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ADMINISTRATIVE INFORMATION

Support - None.

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 22 August 2023 and was last updated on 22 August 2023.

INTRODUCTION

Review question / Objective Many articles explore the relation of C-reactive protein (CRP) with survival outcomes of ovarian cancer (OC) cases, but no consistent results can be obtained. Therefore, this meta-analysis was carried out for assessing accurate prognostic and clinicopathological role of CRP levels in OC.

Condition being studied PubMed, Web of Science, Embase, and Cochrane Library databases were systemically searched from inception till April 7, 2023. Later, the effect of CRP on estimating OC prognostic outcome was analyzed through computing combined hazard ratios (HRs) together with relevant 95% confidence intervals (CIs). Thereafter, association between CRP and clinicopathological factors of OC patients are evaluated through combined odds ratios (ORs) and corresponding 95%CIs.

METHODS

Search strategy PubMed, Web of Science, Embase, and Cochrane Library database were thoroughly searched from inception till April 7, 2023 using the following search strategies and terms: (c-reactive protein or C-reactive protein or CRP) and (ovarian cancer or ovarian neoplasm or ovarian carcinoma or ovarian tumor or cancer of ovary or ovary cancer). Only English publications were included. Moreover, reference lists in eligible studies were explored to obtain any potentially relevant works.

Participant or population Patients with OC diagnosed by pathology.

Intervention Studies reported association between pretreatment CRP levels and any survival outcomes in OC and a threshold was identified to stratify low and high CRP levels.

Comparator OC patients with normal level CRP.

Study designs to be included Cohort studies,including prospective and retrospective cohortspublished in English.

Eligibility criteria Articles were selected based on criteria below: (1) OC diagnosed by pathology; (2) studies reported association between pretreatment CRP levels and any survival outcomes in OC; (3) studies with available hazard ratio (HRs) and 95% confidence intervals (CIs) for prognosis or calculable based on available data; (4) a threshold was identified to stratify low and high CRP levels; and (5) English articles.

Information sources PubMed, Web of Science, Embase, and Cochrane Library database were thoroughly searched from inception till April 7, 2023.

Main outcome(s) This work deemed overall survival (OS) and progression-free survival (PFS) as primary and secondary outcomes, separately.

Additional outcome(s) The relations of CRP with clinicopathological factors of OC cases were assessed through combined odds ratios (ORs) and corresponding 95%CIs.

Quality assessment / Risk of bias analysis Subgroup analysis according to different factors was completed for detecting potential heterogeneity source. Funnel plot symmetry was visually inspected for assessing publication bias by Begg's and Egger's tests.

Strategy of data synthesis Combined HRs as well as 95%CIs were determined for valuating if CRP could be used to predict prognosis of OC cases. Heterogeneity across included articles was explored by Cochran's Q test together with I2 statistic. I2>50% and/or P<0.10 indicated obvious heterogeneity and then combined HR was predicted by using a random-effects model; or else, we applied a fixed-effects model.

Subgroup analysis Subgroup analysis according to different factors was completed for detecting potential heterogeneity source.

Sensitivity analysis Sensitivity analysis was conducted by removing one article each time in sequence.

Language restriction Studies published in English language.

Country(ies) involved China.

Keywords CRP; ovarian cancer; meta-analysis; clinical management; prognosis.

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