Prognostic impact of C-reactive protein in metastatic prostate cancer: a systematic review and meta-analysis

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BACKGROUND
Serum C-reactive protein (CRP) demonstrates a prognostic impact in small studies of metastatic prostate cancer (MPC).

METHODS
A systematic review was conducted to identify publications and presentations exploring the association of serum CRP and overall survival (OS) in MPC, both castration-sensitive and castration-resistant. Heterogeneity among trials was assessed using Cochrane’s Q statistic, and the I(2) statistic was used to quantify inconsistency. The assumption of homogeneity was considered invalid if p < 0.1. All statistical tests were 2-sided, and p < 0.05 was considered significant.

RESULTS
6 studies were eligible, totaling 659 evaluable patients. 2 studies evaluated castration-sensitive men receiving androgen deprivation, while the remaining 4 studies evaluated castration-resistant men receiving docetaxel-based chemotherapy. Men with higher CRP had significantly worse OS than those with lower CRP (hazard ratio (HR) = 1.42, p < 0.001, 95% confidence interval (CI) 1.17-1.73). In trials of castration-sensitive men, high CRP yielded a HR = 1.92 (p = 0.005, 95% CI 1.22-3.03; I(2) = 0). In castration-resistant men, high CRP yielded HR = 1.35 (p = 0.003, 95% CI 1.11-1.65; I(2) = 78.6%).

CONCLUSION
This meta-analysis suggests a detrimental impact for CRP on OS in MPC. Prospective validation is justified to enhance prognostication and trial design, given the affordability, ready availability, and large dynamic range of CRP.

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