C-reactive protein, C-peptide, and risk of cardiovascual events and mortality after type 2 diabetes diagnosis: a Danish cohort study

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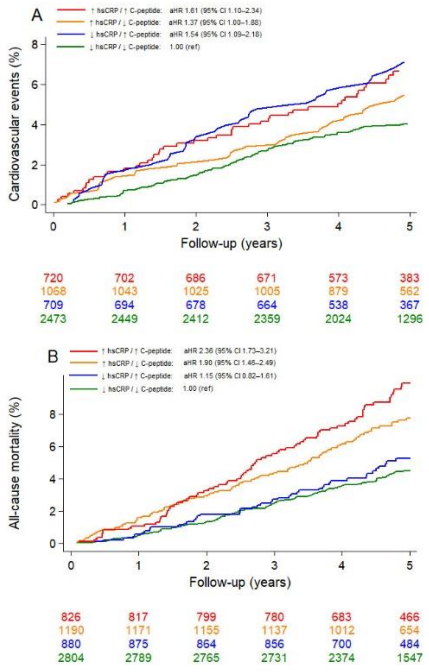
Background and aims: We investigated the relationship between high-sensitivity C-reactive protein (hsCRP, a marker of low-grade inflammation), alone or in combination with C-peptide (a marker of insulin resistance), and risk of cardiovascular events (CVEs) and mortality in patients with recent-onset type 2 diabetes (T2D) and no hospital history of CVEs.
Materials and methods: We measured serum hsCRP in 7,301 patients and C-peptide in 5,765 patients with recent-onset T2D and followed them for a first CVE, including myocardial infarction, stroke, coronary revascularization, and cardiovascular death, and death from any cause.
Results: High (>3 mg/L) versus low (<1 mg/L) hsCRP was associated with an increased CVE risk during a median follow-up of 4.8 years (adjusted hazard ratio: 1.45 [95% confidence interval: 1.08-1.96]), and with strongly increased all-cause mortality (2.49 [1.90-3.27]), mainly driven by cancer mortality. Compared to patients with low levels of both hsCRP (≤3 mg/L) and C-peptide (<1470 pmol/L), those with high levels of both biomarkers had highest risks of CVE (1.62 [1.11-2.36]) and all-cause mortality (2.42 [1.77-3.29]). The risk of CVE increased more with high C-peptide alone (1.54 [1.09-2.18]) than high hsCRP alone (1.37 [1.00-1.88]). In contrast, the risk of all-cause mortality increased much more with high hsCRP alone (1.90 [1.46-2.49]) than with high C-peptide alone (1.15 [0.82-1.61]).
Conclusion: In a contemporary cardiovascular prevention setting, elevated hsCRP is a much weaker predictor of future CVE than of all-cause mortality in patients with early T2D. C-peptide is a more accurate predictor of CVE risk than hsCRP, emphasizing the importance of targeting insulin resistance for prevention of CVE.



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