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Effectiveness of Quality Improvement Strategies for the Management of CKD

A Meta-Analysis

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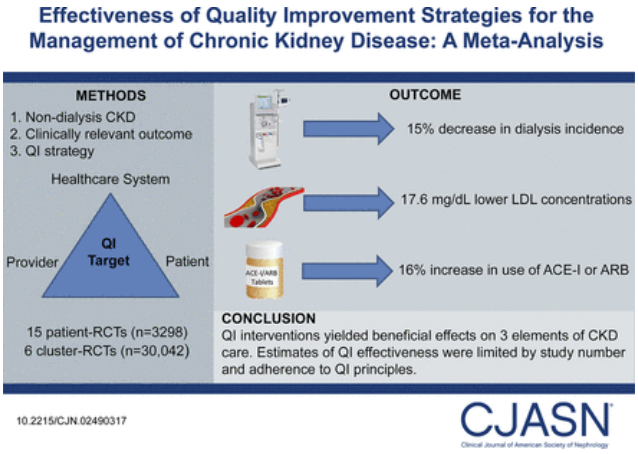
Visual Overview



Abstract

Background and objectives Quality improvement interventions have enhanced care for other chronic illnesses, but their effectiveness for patients with CKD is unknown. We sought to determine the effects of quality improvement strategies on clinical outcomes in adult patients with nondialysis-requiring CKD.

Design, setting, participants, & measurements We conducted a systematic review of randomized trials, searching Medline and the Cochrane Effective Practice and Organization of Care database from January of 2003 to April of 2015. Eligible studies evaluated one or more of 11 prespecified quality improvement strategies, and prespecified study outcomes included at least one process of care measure, surrogate outcome, or hard clinical outcome. We used a random effects model to estimate the pooled risk ratio (RR; dichotomous data) or the mean difference (continuous data).

Results We reviewed 15 patient-level randomized trials (n=3298 patients), and six cluster-randomized trials (n=30,042 patients). Quality improvement strategies reduced dialysis incidence (seven trials; RR, 0.85; 95% confidence interval [95% CI], 0.74 to 0.97) and LDL cholesterol concentrations (four trials; mean difference, −17.6 mg/dl; 95% CI, −28.7 to −6.5), and increased the likelihood that patients received renin-angiotensin-aldosterone system inhibitors (nine trials; RR, 1.16; 95% CI, 1.06 to 1.27). We did not observe statistically significant effects on mortality, cardiovascular events, eGFR, glycated hemoglobin, and systolic or diastolic BP.

Conclusions Quality improvement interventions yielded significant beneficial effects on three elements of CKD care. Estimates of the effectiveness of quality improvement strategies were limited by study number and adherence to quality

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