Review of the comparative effectiveness of radical prostatectomy, radiation therapy, or expectant management of localized prostate cancer in registry data.

Serrell EC, Pitts D, Hayn M, Beaule L, Hansen MH, Sammon JD.

Evidence regarding the effectiveness of treatment for prostate cancer is primarily based on randomized controlled trials. Long-term outcomes are generally difficult to evaluate within experimental studies and may benefit from large pools of observational data. We conducted a systematic review of administrative and registry studies to evaluate the comparative effectiveness of treatment for clinically localized prostate cancer on overall and prostate-cancer specific mortality.

MATERIALS AND METHODS: In accordance with the preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P, 2015), we conducted a systematic search of Ovid Medline and Embase (1946-February 2017) and identified studies that evaluated the relationship between types of treatment for localized prostate cancer and mortality. Additional articles were identified through manual search. Randomized, prospective, and single institution studies were excluded. The risk of bias for each study was evaluated with the Newcastle Ottawa scale. Multivariable adjusted hazard ratios were reported to evaluate overall and cancer-specific mortality.

RESULTS: We screened 4,721 studies and included for review, 19 that were published between 2001 and 2015. The pooled population included 228,444 patients. Countries of origin included the United States, Canada, China, Switzerland, the Netherlands, and Sweden, and the sources included administrative (n = 6) and cancer registry or prostate databases (n = 11). Overall and cancer-specific mortality were lowest among definitive treatment arms as compared to conservative therapy with no treatment, observation, or active surveillance. Radiotherapy was associated with worse overall and cancer-specific mortality than radical prostatectomy.

CONCLUSION: Although observational studies using large, population-based cohorts have the potential for bias, we found consistent evidence that high-quality observational studies may be used to evaluate the comparative effectiveness of prostate cancer treatment. Methodologic limitations of observational data should be considered.

Copyright © 2017 Elsevier Inc. All rights reserved.

KEYWORDS: Mortality; Observational; Prostate Cancer; Prostatic neoplasms; Systematic Review; Treatment
Review of the comparative effectiveness of radical prostatectomy, radia...