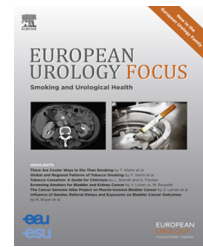


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Review – Bladder Cancer

Functional Outcomes Following Radical Cystectomy in Women with Bladder Cancer: A Systematic Review

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Abstract

Context: Gender-specific functional and health-related quality of life (HRQOL) outcomes following radical cystectomy (RC) for bladder cancer (BCa) remain unclear, with many studies excluding women from the study population.

Objective: To better characterize female-specific functional outcomes following RC and urinary diversion for BCa.

Evidence acquisition: We performed a critical review of PubMed/Medline and Embase in August 2015 according to the Preferred Reporting Items for Systematic Reviews and Meta-analysis statement. Outcomes of interest included urinary function (for orthotopic neobladder), sexual function, bowel function, and quality of life. Excluded were non-bladder malignancies, RCs performed for neurogenic bladder dysfunction, and patients with exposure to radiation therapy prior to surgery. Forty-five publications were selected for inclusion in this analysis.

Evidence synthesis: Included reports addressed urinary function (34 studies), sexual function (11 studies), and HRQOL (9 studies). All studies had a high risk of bias and ranged significantly in sample size, inclusion criteria, and follow-up time, precluding meaningful meta-analysis. Daytime incontinence approximated 20%, nighttime incontinence 20%, and hypercontinence 10–20%. Sexual function appeared to be better among those patients undergoing genitalia-sparing RC, but generally poor outcomes were noted among those undergoing routine RC. Only 40% of studies assessed sexual function using standardized instruments. HRQOL differences between diversion types appeared to be minimal, whereas comparisons with the general population revealed significant differences in emotional problems, role functioning, fatigue, and appetite.

Conclusions: Functional outcomes among women undergoing RC for BCa are poorly studied with limitations regarding use of validated questionnaires, heterogeneous patient populations, and small sample sizes. Collaborative efforts will be needed to better define functional outcomes among this poorly studied patient population.

Patient summary: We reviewed functional outcomes following cystectomy among women with bladder cancer. We found that urinary, sexual, and bowel function and quality of life are poorly studied among women, with function ranging significantly across studies.

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1. Introduction

Radical cystectomy (RC) with urinary diversion is the standard treatment for patients with muscle-invasive and high-risk non-muscle-invasive urothelial carcinoma of the bladder [1]. Although bladder cancer (BCa) is more common among men, it remains the 17th most common cancer in women worldwide, with approximately 74 000 new cases diagnosed each year [2]. Women more often present with advanced stage at diagnosis, leading to RC [3].

RC technique differs between men and women. Women traditionally undergo anterior pelvic exenteration that includes RC, anterior vaginectomy, hysterectomy, and bilateral salpingo-oophorectomy with urinary diversion. Additional surgical modifications of female RC include techniques such as urethra sparing, gynecologic organ sparing (in which the ovaries, uterus, and vagina are spared), and nerve sparing (NS; in which autonomic innervation from the pelvic plexus is spared). Men undergo cystoprostatectomy with urinary diversion that may or may not involve NS. Diversion choices include incontinent reservoirs (eg, ileal conduit [IC]), continent catheterizable reservoirs, cutaneous ureterostomies, or orthotopic neobladder (ONB) formation. Surgical technique and urinary diversion choices differ between men and women, and so likely do functional outcomes between genders. We have an understanding of post-RC continence rates, sexual function, and quality of life (QOL) among RC patients, but most of these samples include men. Unfortunately, gender-specific functional and health-related quality of life (HRQOL) outcomes remain unclear, with many studies excluding women from the study population.

To better characterize female-specific functional outcomes following RC, we conducted a systematic review that assessed urinary, sexual, and bowel function as well as overall HRQOL among women undergoing RC and urinary diversion for BCa. Our objective was to integrate the available evidence regarding female-specific functional outcomes following RC for BCa, provide an overview of functional outcomes in the female RC/BCa population, and identify potential areas for future research.

2. Evidence acquisition

A medical librarian was consulted to conduct a systematic review of the literature. Search parameters included women undergoing RC and urinary diversion for treatment of primary BCa. Outcomes of interest included urinary function (for ONB), sexual function, bowel function, and QOL. However, given that no studies explicitly evaluated bowel function, our analysis was limited to urinary function, sexual function, and QOL. Excluded were non-bladder malignancies, RCs performed for neurogenic bladder dysfunction, and patients with exposure to radiation therapy prior to surgery.

Database searches were completed in August 2015. All years (1966–present) were searched in both PubMed and Embase databases. Terms used in the PubMed strategy

included a combination of Medical Subject Headings (MeSH) and text words or phrases: (“bladder cancer” OR urinary bladder neoplasms [MeSH]) AND (“radical cystectomy” OR cystectomy [MeSH]) AND (neobladder OR urinary diversion [MeSH]). The strategy for the Embase search was modified to replace MeSH terms with Emtree terms: (‘bladder cancer’/de AND ‘cystectomy’/de AND ‘urinary diversion’/de AND [article]/lim). Until recently, few studies that focused on women were reported in the literature. Even among studies that included women, the ratio of men to women was high, and results were often not reported or analyzed based on gender. Even though we limited our search results to *female*, it did not exclude citations for studies of both men and women, so we combined the sets again using Boolean operators *AND* and *NOT* to exclude any citations that were indexed using the term *male*. Due to the limited number of results retrieved, the search strategy did not include any terms related to treatment outcomes.

Inclusion criteria consisted of studies that addressed RC and urinary diversion for treatment of primary BCa, included at least one functional outcome (daytime or nighttime incontinence, hypercontinence, sexual function, or QOL), and specifically provided these outcomes for women (as opposed to men and women together). Retrospective studies were permitted given the absence of prospective randomized studies in this population, but case studies, reviews, and editorials were excluded. Additional excluded studies were those with nonbladder malignancies, RCs performed for benign indications, patient populations with exposure to radiation therapy prior to surgery, functional outcomes of men and women jointly described (not separately), and non-English text.

All citations were screened by two reviewers (A.S. and K.C.). Throughout the screening process, citations were designated as either *included* or *excluded* based on established criteria, as described previously. A review of titles and abstracts identified citations that could be excluded based on lack of relevance or the type of article or publication (eg, review, case study, editorial, or letter). Excluded citations were entered on a spreadsheet specifying the reason for exclusion. Full-text articles were obtained for citations that did not provide sufficient detail in the abstract to determine if the studies were eligible for inclusion. Copies of the full-text articles for all included studies were also obtained and read in their entirety. Studies that focused on oncologic outcomes or surgical technique alone were excluded. Additional studies were excluded based on details revealed in the text of the articles, but several previously excluded studies were found to be eligible on closer scrutiny.

Cited references of included studies were examined to identify additional studies not retrieved by database searches. Guidelines, systematic reviews, and other review articles retrieved during the search process were excluded from the results, but their cited references were examined to identify additional studies that might be eligible. Author affiliations were used to help identify

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