

# HEALTH RELATED QUALITY OF LIFE AFTER RADICAL CYSTECTOMY AND URINARY DIVERSION FOR BLADDER CANCER: A SYSTEMATIC REVIEW AND CRITICAL ANALYSIS OF THE LITERATURE

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## ABSTRACT

**Purpose:** Continent forms of urinary diversion have become a gold standard of urinary tract reconstruction after radical cystectomy, based mostly on the premise of improved quality of life. It is unclear whether the existing body of literature supports this assumption.

**Materials and Methods:** We performed a systematic review to determine if differences exist in health related quality of life (HRQOL) outcomes among different types of urinary diversion after radical cystectomy. A MEDLINE search was performed inclusive of the dates 1966 to January 2004. Inclusion criteria included adult patients, patients with bladder cancer, comparative studies, original research, primary study outcome related to quality of life, and use of a quality of life instrument to measure outcomes. Only studies comparing neobladder, continent reservoir, or conduit diversion were included.

**Results:** Of 378 initial articles 15 studies met all inclusion criteria. None of the studies were randomized trials. Only 1 study was prospective. Of 15 studies 10 (67%) used some type of previously validated HRQOL instrument, 10 (67%) used some form of ad hoc instrument, 11 (73%) used bladder cancer disease specific instruments, while 9 (60%) used general instruments. Only 1 of the bladder cancer specific instruments had been previously validated. Common limitations included unvalidated HRQOL instruments, use of general HRQOL instruments only, lack of baseline data, cross-sectional analysis, and retrospective study design.

**Conclusions:** To date, the current body of published literature is insufficient to conclude that 1 form of urinary diversion is superior to another based on HRQOL outcomes. Future studies should attempt to incorporate prospective data collection, longer term followup and validated disease specific HRQOL instruments.

**KEY WORDS:** bladder cancer, urinary diversion, health related quality of life, cystectomy

Radical cystectomy with urinary tract reconstruction currently remains the standard treatment for invasive bladder cancer. Historically, conduit diversion has been the mainstay of urinary tract reconstruction. However, with the introduction of continent and orthotopic forms of urinary diversion, the paradigm has slowly changed. Initially orthotopic and continent reconstruction were reserved for patients who were deemed ideal surgical candidates. This caution was based on a higher complication rate and concerns about cancer control.<sup>1</sup> However, with experience complication rates and operative times have been reduced, and studies have shown that the type of urinary diversion performed has no impact on cancer control.<sup>1</sup> During the last decade orthotopic and continent diversions have become a “gold standard” for urinary tract reconstruction after radical cystectomy for invasive bladder cancer.<sup>1</sup> It has been estimated that 80% of men and 65% of women undergoing

cystectomy for bladder cancer are candidates for orthotopic neobladder (NB).<sup>2</sup>

The perceived advantage of the various forms of continent urinary diversion is a presumed improvement in quality of life compared with conduit diversion. However, these more “advanced” forms of urinary diversion may have some disadvantages as well. Continent forms of diversion are technically more challenging and more time consuming. Postoperatively, patients leave the hospital with indwelling catheters. Once the catheters are removed, patients must undergo a period of education in the techniques required to properly care for the reservoir or neobladder. Patients are also at a higher risk for diarrhea and vitamin B12 malabsorption. However, it is generally believed that the quality of life advantages of continent urinary diversions outweigh the potential disadvantages.

In the past decade, there has been an increasing focus on quality of life outcomes in urological malignancies. This has been aided by the development of new health related quality of life (HRQOL) instruments for use specifically in urology. HRQOL is a patient centered outcome and can be defined as a patient’s evaluation of the impact of a health condition and its treatment on relevant aspects of life. To investigate the premise that continent forms of urinary diversion offer superior HRQOL, we performed a systematic review of the published literature. Systematic reviews differ from other types of review in that they adhere to a strict design to make them more comprehensive, thus minimizing the chance of bias, and ensuring their reliability.<sup>3</sup> We also attempted to identify

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Summary of the studies that met the inclusion criteria

References	Comparisons (No.)	Instrument		Validated?	Study Design	Time of HRQOL Assessment	Source Population	Major Findings
		Name*	Disease Specific					
Bjerre et al (1995)	NB (38) IC (29)	Ad hoc	Specific	No	Retrospective Cross-sectional	NB—1 yr IC—4.8 yrs	Denmark	Incontinence more bothersome in IC, other parameters equivalent
Boyd et al (1987)	CR (85) IC (87)	Ad hoc BDI PMS	Specific (mental health) General (mental health)	No Yes Yes	Retrospective Cross-sectional	Not reported	United States	With CR more likely to be sexually active, other parameters equivalent
Conde et al (2001)	NB (27) IC (6)	Ad hoc	Specific	No	Retrospective Cross-sectional	Not reported	Spain	IC more problems with urine leakage + depression
Dutta et al (2002)	NB (49) IC (23)	SF-36 FACT-G	General (Ca)	Yes Yes	Retrospective Cross-sectional	2.7 Yrs	United States	NB better on several domains, but only marginal difference after adjusting for age, stage + sex
Fujisawa et al (2000)	NB (36) IC (20)	SF-36	General	Yes	Retrospective Cross-sectional	NB—31 mos IC—44 mos	Japan	No differences found
Gerharz et al (1997)	CR (64) IC (326)	Ad hoc	Specific	No	Retrospective Cross-sectional	CR—2.5 yrs IC—2.9 yrs	Germany	CR better in some domains + on stoma related items, overall QOL equivalent
Hara et al (2002)	NB (48) IC (37)	SF-36 Ad hoc	General Specific	Yes No	Retrospective Cross-sectional	NB—46 mos IC—131 mos	Japan	Equivalent in all domains of SF-36
Hardt et al (2000)	CR (20) IC (24)	SF-36 Fragen zur Lebenszufriedenheit Module Ad hoc	General General Specific	Yes Yes No	Prospective Longitudinal	0 + 12 Mos	Germany	Sexual function equivalent, all SF-36 domains returned to baseline by 1 yr except physical function
Hart et al (1999)	NB (103) CR (93) IC (25)	PMS Sexual history form Body image scale QOL questionnaire	General (mental health) General (sexual function) General (body image) General	Yes No No No	Retrospective Cross-sectional	NB—3.6 mos CR—8.3 mos IC—14.1 mos	United States	Pts with IC worse social function
Hobisch et al (2001)	NB (69) IC (33)	EORTC-QLQ-30C Ad hoc	General (Ca) Specific	Yes No	Retrospective Cross-sectional	NB—28.3 mos IC—55.5 mos	Austria	NB better in all domains, NB with more travel + leisure + more likely to recommend to friend
Kitamura et al (1999)	NB (21) CR (22) IC (36)	EORTC-QLQ-30C Ad hoc	General (Ca) Specific	Yes No	Retrospective Cross-sectional	Not reported	Japan	Pts with IC more likely to have trouble with public restrooms + travel
Mansson et al (1988)	CR (20) IC (40)	Ad hoc	Specific	No	Retrospective Cross-sectional	NB—57 mos IC—66 mos	Sweden	Pts with IC had more problems with leakage + odor, other parameters equivalent
Mansson et al (2002)	NB (29) CR (35)	FACT-BI Hospital Anxiety and Depression Scale	Specific (bladder Ca) Specific (mental health)	Yes Yes	Retrospective Cross-sectional	NB—4.1 yrs CR—6.1 yrs	Sweden	NB had more difficulties with incontinence, FACT-G + Hospital Anxiety and Depression Scale measures equivalent
McGuire et al (2000)	NB (38) CR (16) IC (38)	SF-36	General	Yes	Retrospective Cross-sectional	NB—48 mos CR—24 mos IC—42 mos	United States	All groups equivalent compared to population norms
Okada et al (1997)	CR (74) IC (63)	Ad hoc	Specific	No	Retrospective Cross-sectional	CR—43 mos IC—92 mos	Japan	CR bathed more, traveled more + had less local stoma problems

\* All questionnaires/instruments developed specifically for the study without previous published validation are considered ad hoc.

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