Long-term health-related quality of life after curative treatment for prostate cancer: A regional cross-sectional comparison of two standard treatment modalities

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Abstract. Effects on long-term health-related quality of life (HRQoL) were evaluated in patients treated for localized prostate cancer by two standard modalities: radical retropubic prostatectomy (RP) and external beam radiotherapy combined with a high-dose-rate brachytherapy boost (HDRBT-EBRT). The HRQoL data were compared with age-adjusted normative data. Men diagnosed with localized prostate cancer and treated with curative intent in Gothenburg, Sweden, 1988-1997 were included. HRQoL was measured in October 2000 using the EORTC QLQ-C30 and EORTC QLQ-PR25 questionnaires, with a response rate of 82% (n=347). No differences in patient characteristics were found between the two treatment groups, except regarding tumor stage and PSA recurrence at the time of the questionnaires. In the RP group, 42% had T1 and 6% had T3-4 tumors; corresponding proportions in the HDRBT-EBRT group were 29% and 13% (P=0.01). PSA recurrence was detected in 44% of RP patients and 9% of HDRBT-EBRT patients. In most domains, mean HRQoL scores were high and similar to the scores for the age-adjusted normative sample. However, patients reported better role and physical function compared to the normal population. We also observed more sleeping disturbances but less pain among patients than in the normal population. The disease-specific questionnaires showed statistically significant higher levels of bowel and urinary problems in the irradiated group than in the RP group, and the absolute difference between the groups was small and had minor clinical significance. We conclude that overall the general quality of life was rated high by the patients irrespective of curative treatment modality and in agreement with age-adjusted normative data. Statistically significant differences in bowel and urinary symptoms were found between the two treatment groups in favor of the RP group, but the clinical significance was small.

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Introduction

Prostate cancer (PC) is a major health problem in men in the Western world. Definitive treatment options for localized PC routinely include radical retropubic prostatectomy (RP), external beam radiotherapy (EBRT), and brachytherapy or a combination of these methods. A recent review of 18,000 studies compared the outcomes of curative treatment of localized PC in the post-PSA era (1), and it was concluded that randomized studies are rare and there is a lack of evidence to determine whether any of the available treatment options are superior for prolonging survival. Therefore, it is necessary for patients to consider the morbidity and side-effects of the treatment modalities when deciding on treatment for PC. This underlines the importance of having detailed knowledge of health-related quality of life (HRQoL) and adverse events associated with different curative treatments. Early HRQoL research concerning treatment-related side-effects such as incontinence, bowel disturbances, and impact on sexual activity showed disparate profiles for the various treatment modalities (2-4). In the cited investigations, patients treated with RP reported more incontinence, which was acute but improved over the first 2 years after treatment. By comparison, bowel problems were worse in irradiated patients, continuing for up to 4 years, and urinary bother was increased in patients treated by brachytherapy with permanent implants. HRQoL studies concerning sexual problems have reported fewer initial problems after brachytherapy and EBRT than after RP, but the results are often hampered by a lack of baseline data.

During the 1990s, questions were raised about whether the traditional EBRT treatment dose of 66-70 Gy was sufficient to cure PC. Since then, several studies have shown increased disease-free survival after dose escalation (5). Such amplification can be done by several different methods: three-dimensional conformal radiotherapy, intensity-modulated

radiotherapy and combinations of these approaches with high-dose-rate brachytherapy (HDRBT), low-dose-rate brachytherapy or particle beam boosts. Some studies have compared acute effects of traditional and modern dose-escalated radiotherapy on HRQoL in PC patients (6,7), and the results indicated comparable HRQoL outcomes. However, few investigations have examined long-term effects in this clinical context.

The aim of the present study was to compare long-term HRQoL in men who were diagnosed with PC between 1988 and 1997 and had undergone one of the two curative treatment strategies that, with small adjustments, are still in routine use today. Our focus was on HRQoL after external beam radiotherapy combined with high-dose-rate brachytherapy (HDRBT-EBRT) and open retropubic prostatectomy (RP).

Patients and methods

Patients. The study cohort comprised all men who had received curative-intent treatment with either RP or HDRBT-EBRT in the Gothenburg area from 1 January 1988 to 31 December 1997 (n=492). All members of this cohort who were still alive in October 2000 were asked to participate in the HRQoL study. Two urological departments and one oncological department were involved. Evaluated patient records and death certificates covered the period 1999-2001, during which time three standard treatments [RP, EBRT and EBRT combined with HDRBT Ir-192 (radionuclide, iridium192)] and one experimental treatment [cryoablation surgery (Cryo)] were available. Men treated with EBRT alone or Cryo were not included in the study: the former because they had been treated with an old technique and inadequate doses according to the present standard; the latter because only a small selected group of patients under surveillance received Cryo treatment.

Clinical staging. TNM stage was defined according to the UICC 1992 classification (8). T stage data were obtained from patient records or from pathology reports. Patients were divided into low-, intermediate- and high-risk PC groups. The low- and high-risk groups were, respectively, classified according to the following criteria: prostate-specific antigen (PSA) <10 and WHO grade 1 (corresponding to Gleason score ≤5) and T1; PSA ≥20 and/or WHO grade 3 (corresponding to Gleason score ≥4+3) and/or T3. The intermediate-risk group comprised all patients that were not included in either the low- or the high-risk group. In the high-risk PC group, lymph node dissection was performed before radiotherapy or during RP, and M stage was assessed by bone scan.

Radical retropubic prostatectomy (the RP group). RP was performed as an open retropubic procedure, if possible using the nerve-sparing technique. The majority of patients underwent regional lymph node excision with frozen section, and only men with N0 were included (9).

Brachytherapy combined with external beam radiotherapy (the HDRBT-EBRT group). The radiotherapy technique used has been previously described in detail (10). Briefly, the prescribed target dose was 50 Gy, which was given in 2-Gy fractions using high-energy photons delivered by a standard four-field box technique to the prostate and seminal vesicles. The HDRBT target dose was 20 Gy in two 10-Gy fractions, which were delivered 2 weeks apart to the prostate gland and the base of the vesicles with a 3-mm margin.

Neoadjuvant hormonal therapy (NHT). In addition to the treatment modalities described above, NHT using a GNRH analogue was given 3-6 months before start of treatment to patients with high-risk features. For irradiated patients, NHT was administered throughout the course of radiotherapy. NHT was also given to 51% of the patients in the RP group who were participating in a clinical study (11).

Follow-up. A majority of the patients underwent annual follow-up at the Department of Oncology or Urology at Sahlgrenska University Hospital, including clinical examination and measurement of PSA. A bone scan was performed if PSA relapse occurred or was suspected on clinical grounds. Most patients with relapse of disease were treated with early hormone therapy or were given the best supportive care, as recommended by the treating physician.

Data collection. After a mean follow-up time of 7 years (range, 4-16 years) in October 2000 to April 2001, all men who were still alive were asked by mail to participate in the HRQoL assessment by completing a HRQoL questionnaire and returning it in a prepaid envelope. The Regional Cancer Registry in Gothenburg handled all questionnaires and entered data in the study database. One reminder was sent.

Instruments. The European Organization of Research and Treatment of Cancer (EORTC) developed the Quality of Life Questionnaire C30 (EORTC QLQ-C30) to measure HRQoL in cancer patients participating in clinical trials (12). This instrument includes 30 items comprising five functional scales (physical, role, emotional, social and cognitive), three symptom scales (fatigue, pain, nausea and vomiting), a global health status/QoL scale, and six single items (dyspnea, loss of appetite, insomnia, constipation, diarrhea and financial impact of disease). In addition to the EORTC QLQ-C30, we used the EORTC QLQ-PR25 (13), which is a disease-specific questionnaire assessing problems related to treatment of PC by use of 25 questions on areas such as sexual function and bladder and bowel problems. During the period covered by the present study, the EORTC QLQ-PR25 had not yet been validated.

Statistical methods. The items of the EORTC QLQ-C30 and QLQ-PR25 instruments were scaled according to the scoring manual (14). Raw scores were transformed into a scale ranging from 0 to 100. Higher scores indicate better functioning on the functional subscales and the global quality of life scale, and more symptoms on the symptom scales. The expected mean value for each of the EORTC QLQ-C30 subscales was calculated using the age distribution in all groups combined with age-specific mean reference scores from the Swedish population (15). Differences in categorical variables were tested using Fisher's exact test. Continuous variables were modeled using linear regression. Group differences were assessed by Wald tests. Results from the regression models are presented as mean differences together with 99% confidence intervals.

Table I. Number of deaths before questionnaires, and number and proportions of respondents per treatment group.

Treatment group	Initial cohort n	Deceased before questionnaires, n (%)	Questionnaires sent, n (%)	Respondents, n (%)
RP	379	48 (13)	331 (79)	261 (79)
HDRBT/EBRT	113	23 (20)	90 (21)	86 (96)
Total	492	71 (14)	421	347 (82)

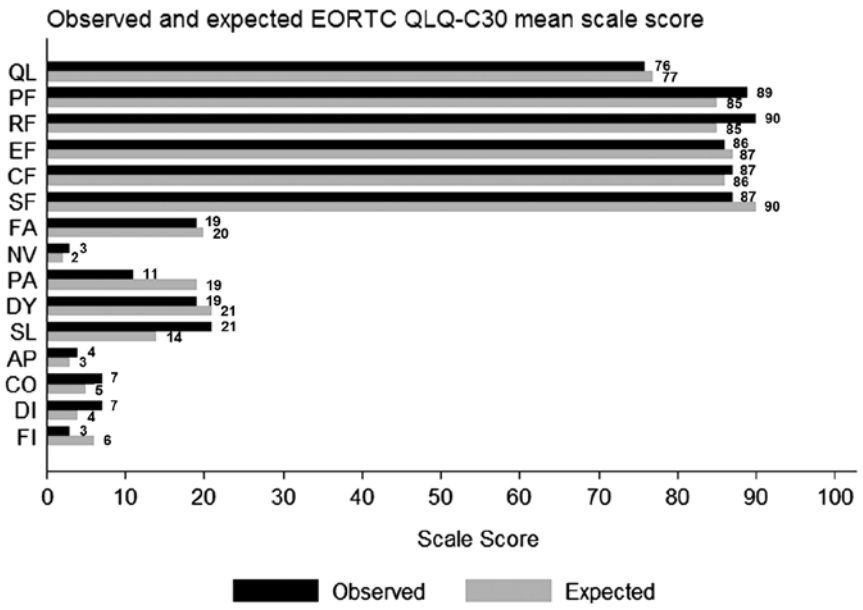

Figure 1. Comparison between HRQoL, mean scores in the study population (observed) and an age-adjusted normative sample (expected). Functional scales (high scores=high levels of functioning): QL, global quality of life; PF, physical function; RF, role function; EF, emotional function; CF, cognitive function; SF, social function. Symptom scales (high scores=high levels of sypmtoms); FA, fatigue; NV, nausea; PA, pain; DY, dyspnea; SL, sleeping disturbances; AP, appetite loss; CO, constipation; DI, diarrhea; FI, financial difficulties.

In the interpretation of the QLQ-C30 scores, a difference of ≥5 points on the 0-100 scale was considered clinically significant. Differences of 5-9 points were considered small, 10-20 as moderate and >20 as large (16). Due to multiple testing, the level of significance was set at 0.01. All statistical analyses were performed using the Stata statistical software version 11.

Results

The initial cohort comprised 492 patients, but 71 (14.4%) of those individuals died before onset of the study. Thus, 421 patients were asked to participate in the HRQoL evaluation; 347 (82%) completed the questionnaires, and 42 declined to take part or did not respond. The initial number of patients in each treatment group, the number of respondents, and the number of deaths before administration of the questionnaires are listed in Table I.

Clinical and demographic patient characteristics for each treatment group are presented in Table II. There were no statistically significant differences in clinical parameters between the groups, except regarding T stage and PSA recurrence at the time of the questionnaires. The proportion of patients with locally advanced disease (T3-T4 tumors) was larger in the HDRBT-EBRT group than in the RP group (13 and 6%, respectively; P=0.01). PSA relapse at the time of the questionnaires was noted in 44% of the men in the RP group compared to 9% in the HDRBT-EBRT group (P<0.0001). All demographic parameters except education were equally distributed between the treatment groups.

HRQoL results for the normative population and the treatment groups are shown in Fig. 1. In general, the patients' mean HRQoL scores were high and similar to the mean scores for the normative sample, with the exception of physical and role function, for which the patients' scores were higher. Considering physical symptoms, compared to the normal population, the patients reported less pain but more pronounced problems with sleep disturbances.

The results of the univariate and multivariate analyses comparing the two treatment groups are outlined in Table III. Taking into account age, PSA recurrence, and neo-adjuvant hormonal treatment, there were no statistically significant differences between the groups in either the univariate or the multivariate regression analysis of the functional domains in the EORTC QLQ C-30 questionnaire. Adding 'risk group at diagnosis' or 'time from diagnosis to time for questionnaire' as confounding factors did not change the results (data not shown). Concerning the symptom scale, a higher level of problem with diarrhea was found in the HDRBT-EBRT group,

Table II. Clinical and demographic characteristics of the patients in the two treatment groups.

	Prostatectomy	HDRBT-EBRT	P-value[e]	Total
No. of patients (%)	261 (75)	86 (25)		347 (100)
Age (years)				
Mean (SD)	70 (6.0)	70 (6.2)	NS[f]	70 (6.1)
Median (range)	70 (51-83)	70 (56-83)		70 (51-83)
WHO, n (%)				
1	108 (41)	33 (38)		141 (41)
2	113 (43)	35 (41)		148 (43)
3	32 (12)	4 (5)	NS	36 (10)
Missing	8 (3)	14 (16)		22 (6)
Clinical T stage, n (%)				
1	111 (42)	25 (29)		136 (39)
2	132 (51)	49 (57)		181 (52)
3	16 (6)	11 (13)		27 (8)
4	0 (0)	1 (1)	0.01	1 (0)
Missing	2 (1)	0		2 (1)
PSA (ng/ml)				
Mean	16 (29.9)	12 (9.1)	NS[f]	15.3 (26.4)
Median (range)	9.2 (0.9-410)	9.6 (0.5-36)		9.4 (0.5-410)
Risk group,[a] n (%)				
Low	37 (14)	5 (6)		42 (12)
Intermediate	123 (47)	39 (45)		162 (47)
High	92 (35)	30 (35)	NS	122 (35)
Missing	9 (3)	12 (14)		21 (6)
Neoadjuvant hormonal therapy, n (%)	133 (51)	49 (57)	NS	182 (52)
Relapse at time of questionnaires, n (%)	114 (44)	8 (9)	<0.000	122 (35)
Civil status, n (%)				
Married	215 (82)	73 (85)		288 (83)
Single	20 (8)	8 (9)		28 (8)
Single with partner	14 (5)	4 (5)		18 (5)
Widower	11 (4)	1 (1)	NS	12 (3)
Missing	1 (0)			1 (0)
Employment, n (%)				
Gainfully employed	29 (11)	13 (15)		42 (12)
Retired (age >65)	217 (83)	66 (77)		283 (82)
On sick leave[b]	11 (4)	6 (7)		17 (5)
Other	3[c] (1)	1[d] (1)		4 (1)
Missing	1 (0)	1 (1)	NS	2 (1)
Education, n (%)				
Comprehensive school	162 (62)	42 (49)		204 (59)
Higher school degree	23 (9)	7 (8)		30 (9)
University degree	74 (28)	37 (43)	0.007	111 (32)
Missing	2 (1)			2 (1)
Nationality, n (%)				
Swedish	232 (89)	77 (90)		309 (89)
Scandinavian	10 (4)	4 (5)		14 (4)
European (other than above)	15 (6)	4 (5)		19 (5)
Non-European	3 (1)	1 (1)	NS	4 (1)
Missing	1 (0)			1 (0)

[a]Risk groups defined as follows: low, PSA <10 and WHO1 and T1; high, PSA ≥20 and/or WHO3 and/or T3; intermediate, not low or high risk. [b]Denotes prolonged sick leave or early retirement due to illness. Other employment: [c]self-employed; [d]unemployed. P-value: [e]Fisher's exact test and [f]F-test for continuous variables.

Table III. Univariate and multivariate analyses of HRQoL subscales and single items, taking into account age, recurrence of PC at time of questionnaires, and neoadjuvant hormonal treatment.

	Univariate analysis				Multivariate analysis		
Subscale	Mean (SD)	Mean difference	99% CI	P-value	Mean difference	99% CI	P-value
Global quality of life[a]							
HDRBT-EBRT	74 (20)	-3	(-10 to 4)		-6[c]	(-14 to 2)	
RP	77 (22)	ref		0.245	ref		0.053
Physical function[a]							
HDRBT-EBRT	88 (16)	-1	(-6 to 4)		-3	(-8 to 2)	
RP	89 (16)	ref		0.61	ref		0.219
Role function[a]							
HDRBT-EBRT	89 (22)	-2	(-9 to 5)		-5[c]	(-12 to 3)	
RP	91 (21)	ref		0.448	ref		0.094
Emotional function[a]							
HDRBT-EBRT	86 (19)	-0.3	(-6 to 6)		-2	(-8 to 5)	
RP	86 (19)	ref		0.893	ref		0.459
Cognitive function[a]							
HDRBT-EBRT	85 (15)	-3	(-8 to 2)		-4	(-9 to 1)	
RP	87 (16)	ref		0.168	ref		0.06
Social function[a]							
HDRBT-EBRT	85 (20)	-2	(-9 to 5)		-4	(-11 to 4)	
RP	87 (22)	ref		0.454	ref		0.224
Fatigue[b]							
HDRBT-EBRT	20 (19)	2	(-5 to 9)		5[c]	(-3 to 12)	
RP	18 (22)	ref		0.446	ref		0.112
Nausea/vomiting[b]							
HDRBT-EBRT	3 (7)	-0.4	-3 to 3		0.6	-3 to 4	
RP	3 (10)			0.729			0.615
Pain[b]							
HDRBT-EBRT	12 (21)	2	(-6 to 9)		3	(-5 to 11)	
RP	10 (23)	ref		0.567	ref		0.357
Dyspnea[b]							
HDRBT-EBRT	20 (24)	0.7	(-8 to 9)		6[c]	(-3 to 15)	
RP	19 (27)	ref		0.832	ref		0.108
Insomnia[b]							
HDRBT-EBRT	23 (26)	3	(-6 to 12)		6[3]	(-4 to 15)	
RP	20 (28)	ref		0.413	ref		0.121
Appetite loss[b]							
HDRBT-EBRT	4 (10)	-0.3	(-5 to 4)		1	(-4 to 6)	
RP	4 (14)	ref		0.870	ref		0.556
Constipation[b]							
HDRBT-EBRT	7 (18)	0.02	(-6 to 6)		2	(-5 to 9)	
RP	7 (19)	ref		0.032	ref		0.443
Diarrhea[b]							
HDRBT-EBRT	10 (19)	5	(-0.05 to 10)		7[c]	(1 to 12)	
RP	5 (15)	ref		0.011	ref		<0.002

SD, standard deviation; CI, confidence interval; HDRBT-EBRT, high dose-rate brachytherapy. [a]High value indicates high level of functioning and quality of life. [b]High value indicates high level of symptom and problems. [c]Small clinical difference.

Table IV. Prostate cancer specific problems QLQ-PR25: univariate and multivariate analyses of HRQoL subscales EORTC QLQ-PR25, taking into account age, recurrence of PC at time of questionnaires and neoadjuvant hormonal treatment.

	Univariate analysis				Multivariate analysis		
Subscale	Mean (SD)	Mean difference	99% CI	P-value	Mean difference	99% CI	P-value
Urinary function[a]							
HDRBT-EBRT	19 (17)	4	(-1 to 9)		6[b]	(0.2 to 11)	
RP	15 (16)	ref		<0.046	ref		0.008
Bowel function[a]							
HDRBT-EBRT	9 (12)	5	(0.7 to 9)		5[b]	(1 to 10)	
RP	4 (9)	ref		0.003	ref		0.001
Sexual activity[a]							
HDRBT-EBRT	30 (27)	-3	(-13 to 7)		-3	(-13 to 7)	
RP	33 (30)	ref		0.408	ref		0.431
Sexual function							
HDRBT-EBRT	60 (21)	4	(-11 to 18)		-4	(-12 to 20)	
RP	56 (27)	ref		0.528	ref		0.546
Hormone treatment-related symptoms[a]							
HDRBT-EBRT	12 (10)	-0.9	(-5 to 3)		1	(-4 to 5)	
RP	13 (13)	ref		0.557	ref		0.616
Incontinence aid[a]							
HDRBT-EBRT	27 (38)	11	(-13 to 35)		7[b]	(-19 to 33)	
RP	16 (25)	ref		0.256	ref		0.491

EORTC QLQ-PR25 item 20

Sexually active	HDRBT-EBRT	RP	P-value
Yes, n (%)	32 (37)	96 (37)	
No, n (%)	54 (63)	165 (63)	0.521

SD, standard deviation; CI, confidence interval; HDRBT-EBRT, high dose-rate brachytherapy + external beam radiation therapy; RP, radical retropubic prostatectomy. [a]High figure indicates high level of symptom and problems. [b]Small clinical difference.

and this difference was both statistically and clinically significant. Small clinically significant differences favoring the RP group were found for global quality of life, role functioning, fatigue, dyspnea, insomnia and diarrhea, but none of these differences were statistically significant.

Results concerning the disease-specific and treatment-related symptoms are presented in Table IV. Levels of bowel-related symptoms and urinary problems were higher in the HDRBT-EBRT patients than in the RP patients, and these results were statistically significant but the clinical significance were small. There was no statistically significant difference in sexual activity between the two treatment groups, although only 37% of the patients reported that they were sexually active and sexual function was low (mean score 57, SD 25).

Discussion

Clinically localized PC can be treated effectively by use of conceptually different treatment approaches with contrasting patterns of acute and late side-effects. Hence overall and disease-specific HRQoL following treatment has become an important aspect in patients with such disease. In general, the studies published to date concern HRQoL during the first 3-5 years after treatment. The number of longer follow-ups is limited, and, in particular, few investigations have compared late effects of surgery and modern dose-escalated radiotherapy.

The present cross-sectional cohort study explored long-term HRQoL in PC patients 7 years after curative treatment by two different methods, RP and HDRBT-EBRT. The results were compared with age-matched HRQoL data on the normal male population in Sweden. We found that the levels of overall quality of life were high, irrespective of curative treatment modality. In short, the scores were high on functional scales and low on symptom scales in all domains, and they concurred with age-adjusted normative data. The data from the disease-specific questionnaire revealed a small but statistically significant difference in bowel and urinary problems between the treatment groups, in favor of the RP group.

The differences we observed between the study groups agree with the findings of other investigators concerning

general HRQoL in PC patients following curative treatment (17-20). In the disease-specific EORTC QLQ-PR25 instrument, more bowel and urinary tract symptoms were reported by patients in the HDRBT-EBRT group than by those in the RP group. Similar results concerning bowel symptoms have been reported by other researchers (3,17-20). These studies also revealed a pattern of increased urinary problems and incontinence in RP patients, but more extensive urinary bother (e.g., urgency and frequency) among irradiated patients, especially those treated with permanent seeds. HRQoL data on the combined HDRBT-EBRT treatment are limited. However, similar to our findings, a study of HRQoL 5 years after treatment in a cohort of PC patients given HDR brachytherapy and EBRT indicated that urinary symptoms were more common than bowel symptoms (21). The authors suggested that the standard strategy applied at the time of their investigation (i.e., assuming that a central position of the urethra represents a good estimate of the location of urethra, when defining the treatment dose) might have led to administration of higher doses to the urethra than intended and hence affected the incidence of treatment-induced chronic urethritis. A similar technique was used in Gothenburg in the 1990s, which might explain the difference observed in the present study. Moreover, other investigators (19) have reported that urinary and bowel symptoms, as well as sexual problems, are increased after radiotherapy combined with NHT.

Only about one third of the patients in our study were sexually active, and no differences in sexual function were found between the treatment groups. The interpretation of the results in this domain was limited by lack of individual baseline data and data on the normal population. Our analyses were also restricted by the small sample size with respect to this variable. In a comparison of men treated with EBRT, permanent seed implants, and RP, Litwin *et al* (18) noted that the EBRT group reported superior sexual function after 24 months compared to the other groups. However, severe sexual problems were experienced to the same extent in all groups, regardless of treatment. Other studies of HRQoL have demonstrated a general decrease in sexual function after 3-5 years of follow-up in patients treated with RP and EBRT (2019).

The differences we observed between the patient cohort and the normal population agree with the results of a 5-year follow-up investigation of HRQoL in Swedish PC patients (20), which showed that the patients had better physical and role function and lower levels of pain compared to men in the normal population. An explanation for this might be that the PC patients based their questionnaire responses on different standards compared to the non-PC subjects, a phenomenon that has been referred to as 'response shift' (22).

Limitations of the present study include the lack of baseline HRQoL assessment and the lack of randomization to treatment, thus, it is possible that confounding factors affected the results. Although, the RP and the HDRBT-EBRT groups were equivalent regarding the majority of clinical parameters previously shown to be relevant, there was a striking difference between the two groups concerning the PSA recurrence rate at the time of the questionnaires (44 and 9%, respectively). A plausible explanation for this discrepancy is that different definitions of PSA recurrence were applied in our study depending on the treatment modality used: for RP, PSA ≥0.2 ng/ml; for HDR-EBRT, PSA ≥2 ng/ml above nadir. The present study was performed in the early 2000s, at which time RP and dose-escalated radiotherapy were the standard treatment options for localized PC. Technically, both the open RP and the HDRBT-EBRT are still performed in manners similar to those that were employed during the study period. Therefore, our results can provide physicians and PC patients with valuable information concerning long-term effects on HRQoL after treatment of PC, which is particularly important considering that few investigations have compared long-term HRQoL after RP and dose-escalated radiotherapy.

The present study also had several strengths. First of all, it was large, population based, and had a high overall response rate (82%). Furthermore, the public health system in Sweden offers a unique opportunity to follow patients over long periods, and thus, potential inter-individual differences in staging, grading, treatment procedures, and follow-up during the study period were at a minimum in our investigation. Another advantage is that two validated questionnaires were used in our evaluation, one of which is disease specific, and age-adjusted normative data were available.

In conclusion, we found that long-term HRQoL after curative treatment of localized PC by RP or HDRBT-EBRT was high and agreed with age-adjusted normative data. Statistically significant differences in bowel and urinary symptoms were observed in favor of the RP group, but the clinical significance concerning these disparities was small.

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