

# Health services utilization in the end-of-life phase of patients

## dying of prostate cancer in Quebec between 2001 and 2013

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### Introduction

Castration-resistant prostate cancer (CRPC) is a highly fatal and morbid phase of advanced prostate cancer (PCa). Many men will develop symptoms as a result of metastatic disease and local progression. Local progression of the tumour can result in lower urinary tract symptoms, ureteral obstruction, rectal obstruction, etc. These regional complications affect quality of life and may require additional surgical procedures and hospitalization. Regional complications in patients who eventually reach the CRPC phase may vary depending on which type of initial local primary treatment was received.

### Objective

The study objective was to evaluate late regional complications in the last two years of life by type of initial primary treatment (external-beam radiotherapy (EBRT) or radical prostatectomy (RP)) received.

### Methods

#### Design

- Retrospective, observational, longitudinal cohort

#### Data source

- Régie de l'assurance maladie du Québec (RAMQ) and MED-ECHO databases

#### Outcomes

- Regional complications: Genitourinary (GU) and gastrointestinal (GI) procedures

#### Statistical analyses

- Cox regression: measure association between initial primary treatment and survival
- Logistic regression: measure association between initial primary treatment and risk of regional complications

### Methods

#### Inclusion criteria

- Men between ages 60 and 75
- Died of CRPC between 2001 and 2013
- Received EBRT or RP as initial local primary treatment
- Registered to RAMQ drug plan

#### Exclusion criteria

- No initial local primary treatment identified after 1995

#### CRPC definition criteria

- Medically or surgically castrated, and received:
  - Chemotherapy, or
  - Abiraterone, or
  - Palliative radiotherapy
- EBRT(n=681), RP(n=692)

#### Subgroup analysis

- Medically or surgically castrated, and received:
  - Chemotherapy, or
  - Abiraterone
- EBRT(n=206), RP(n=261)

### Results

681 and 692 patients died of PCa in the study period and had received EBRT or RP as initial treatment respectively. The median survival was 80.7 months (95%CI: 76 to 85) in the EBRT group and 85.1 months (95%CI: 78 to 88) in the RP group. In the EBRT group 26.8% of patients received chemotherapy only, 2.6% received abiraterone without prior chemotherapy and 51.4% received palliative radiation without prior chemotherapy or abiraterone. In the RP group, the figures are: 32.3%, 1.8% and 31.6% respectively.

### Subgroup results

Table 1 Patient characteristics

	EBRT (n=206)	RP (n=261)
Age at initial primary treatment(SD)	67.5 (6.8)	67.0 (7.0)
Metastases	199 (96.6)	251 (96.2)
CRPC treatments		
Chemotherapy	185 (89.8)	245 (93.9)
Abiraterone only	21 (10.2)	16 (6.1)
Supportive treatments		
Bone-targeted treatments	93 (45.2)	156 (59.8)
Palliative radiotherapy	165 (80.1)	156 (60.0)

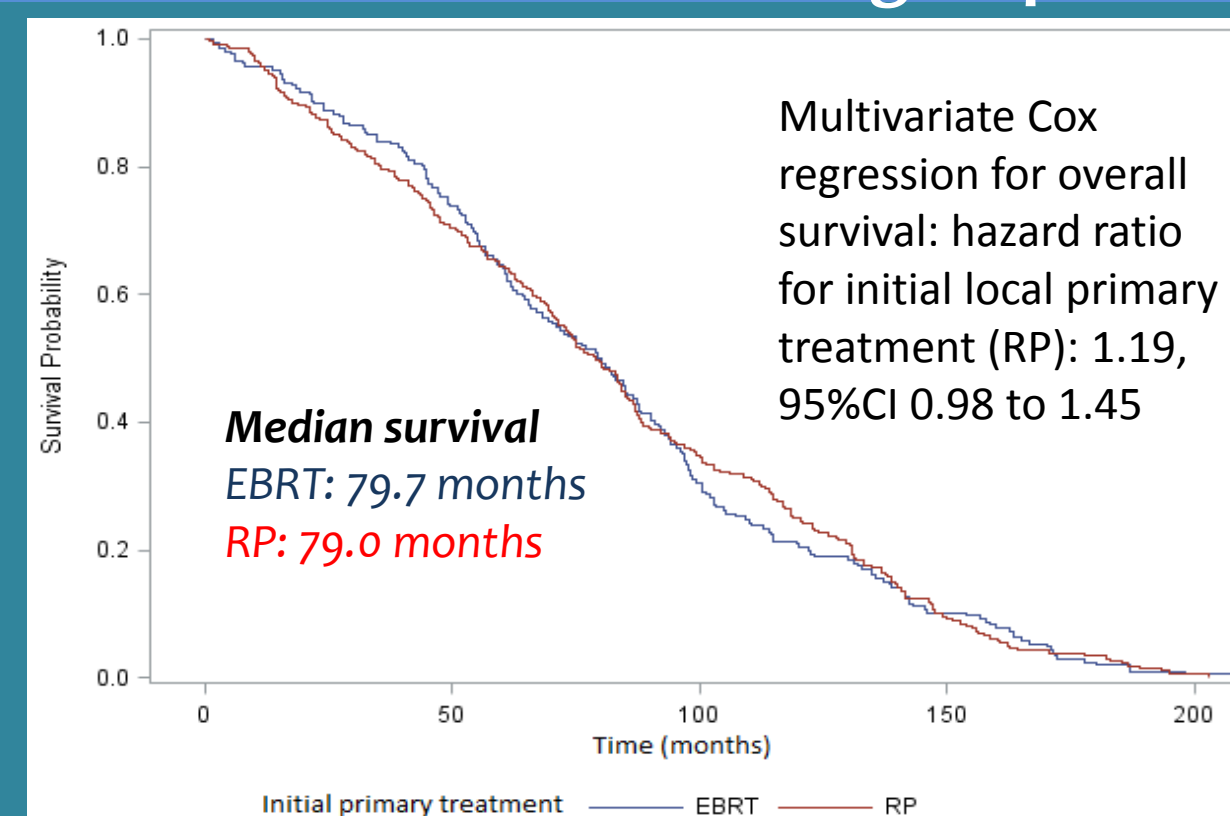


Fig. 1 Overall survival by initial primary treatment

- Overall, 47% of patients had regional complications
  - No difference between EBRT and RT groups (44.2% vs 48.7%)

Table 2 Multivariate logistic regression analysis for risk of regional complications

Covariates	Odds Ratio (OR)	95% CI lower limit	95% CI upper limit	P-value
Initial primary treatment (RP)	0.77	0.52	1.15	0.199
Bone-targeted therapy	0.54	0.37	0.79	0.001
Age	1.03	1.00	1.06	0.029
Palliative radiotherapy	0.79	0.52	1.19	0.261
Proximity to radiation oncology centre	0.99	0.64	1.57	0.995
Metastases	1.73	0.62	4.86	0.297

### Conclusion

The risk of late regional complications in CRPC wasn't associated with the type of initial local primary treatment received for PCa in patients treated with chemotherapy or abiraterone in CRPC.

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