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# Definitive Radiation-Based Therapy for Muscle-Invasive Bladder Cancer: The Canadian Multicenter Experience

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## Disclosures

- None



## Introduction

- Muscle-Invasive Bladder Cancer (MIBC)
  - **25-30% of BC's → progression**
  - **Radical Cystectomy + PLND (+ NAC)**
  - **Morbidity**
- Bladder-preservation therapy
  - Trimodal therapy → best bladder-preservation therapy
  - Comparable oncological outcomes → selected patients



## Objectives

- Study patients treated with radiation-based bladder-preservation therapy
- Oncological Outcomes



## Methods

- Study design
  - Retrospective
  - Multicenter
  - 2001 → 2018
  - 10 Academic Centers in Canada
- Curative intent RT
  - MIBC patients (T2-4a / N0-2 / M0)
  - TURBT + RT (>45Gy) ± Radiosensitizer



## Methods

- 843 patients
  - Ongoing collaboration project
- Statistical Analysis
  - Descriptive
  - Survival → Kaplan-Meier + log-rank test



# Results - Descriptive Analysis

- Total = 843 patients
  - Median age at diagnosis 77y [69 - 82]
  - Gender: 73% male
  - ECOG 0/1 = 62%  
2-3 = 17%  
unknown = 21%



## Results - Descriptive Analysis

- 843 patients
  - Clinical Staging

Staging	%
cT2	<b>75.1</b>
cT3 - cT4a	<b>22.2</b>
Missing	<b>2.7</b>
cN0	<b>78.6</b>
cN+	<b>9.3</b>
Missing	<b>12.1</b>





## Results - Descriptive Analysis

- 843 patients

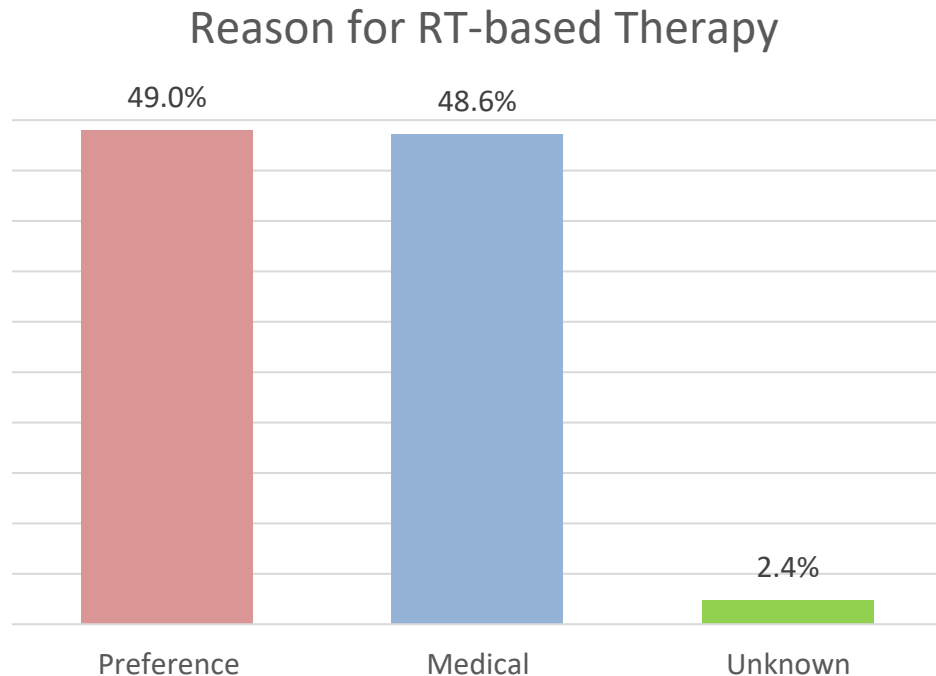
### Clinicopathological Characteristics

Variable	Yes (%)	No (%)	Missing (%)
CIS	19.5	57.7	22.8
LVI	21.1	64.8	14.1
Hydro	23.4	73.7	2.9
Complete TURBT	53.1	31.6	15.3
NAC	15.3	82.9	1.8
Conc. Chemo	63.4	36.6	-



## Results - Descriptive Analysis

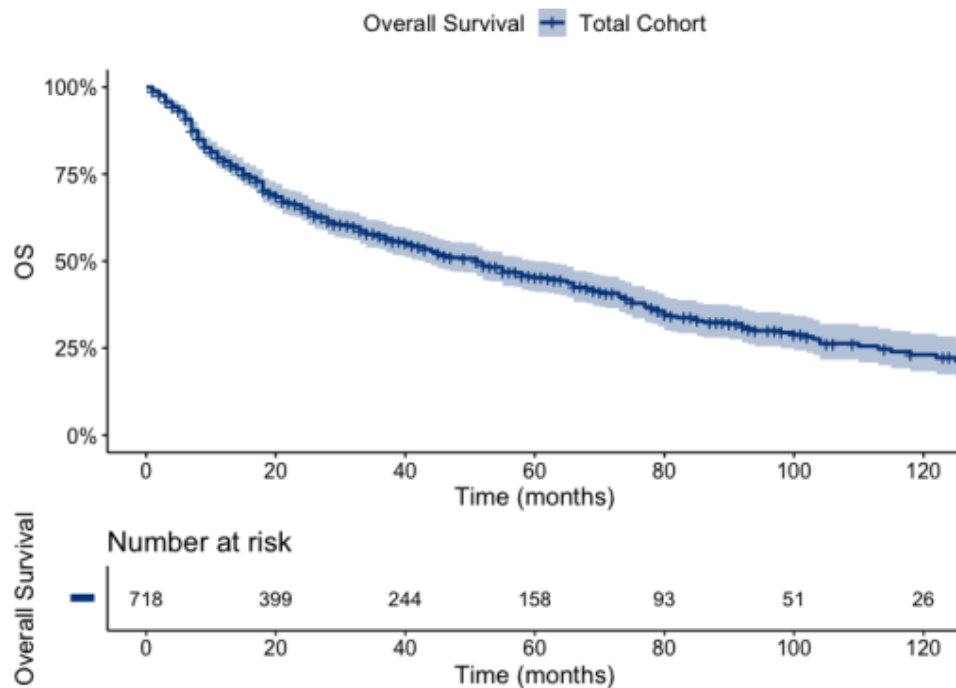
- 843 patients
  - Reason for RT





## Results - Survival Analysis

- Overall Survival
  - 373 deaths
  - Median = 51 months (95% CI 43-60)
  - 2 y = 65.3% (95% CI 61.7 - 69.1)
  - 5 y = 45.3% (95% CI 41.1 - 49.9)

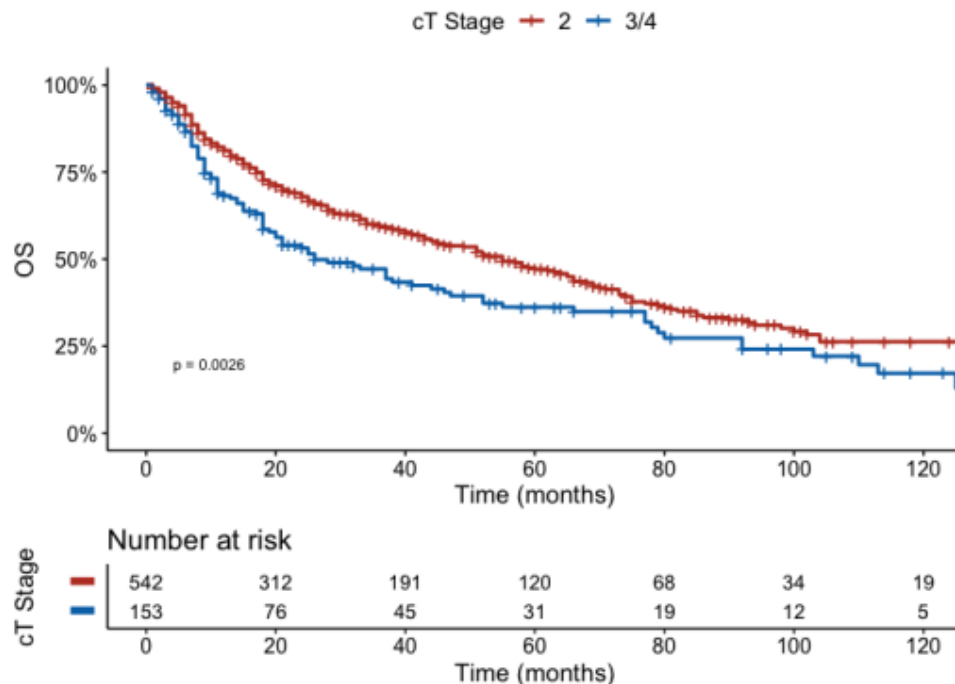




## Results - Survival Analysis

- Significant predictors of OS

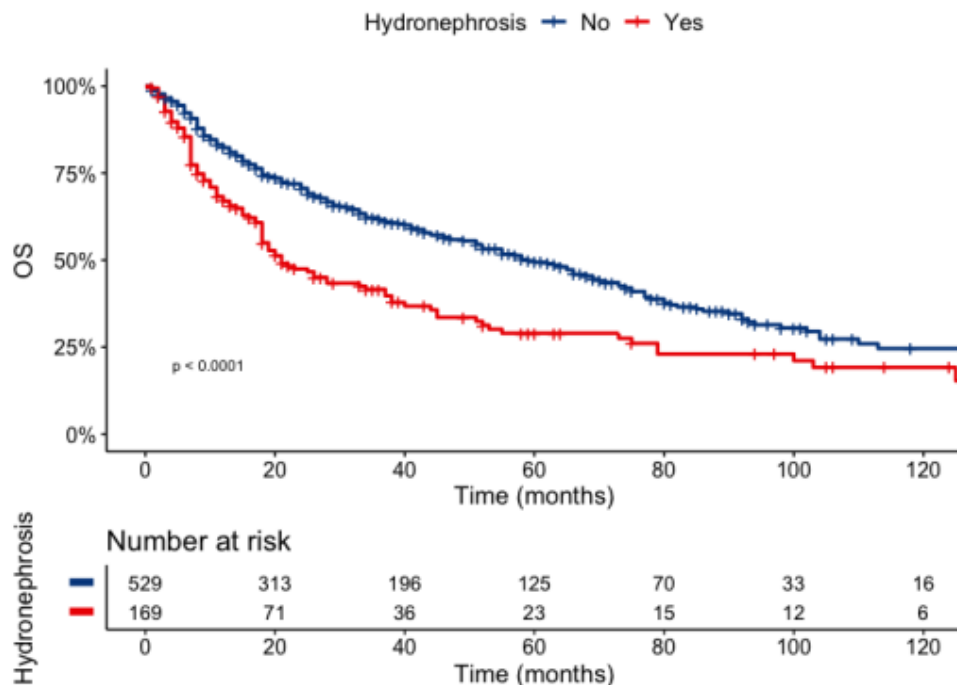
- cT stage
- Hydronephrosis
- Complete TURBT
- Concurrent Chemotherapy
- Complete Response





## Results - Survival Analysis

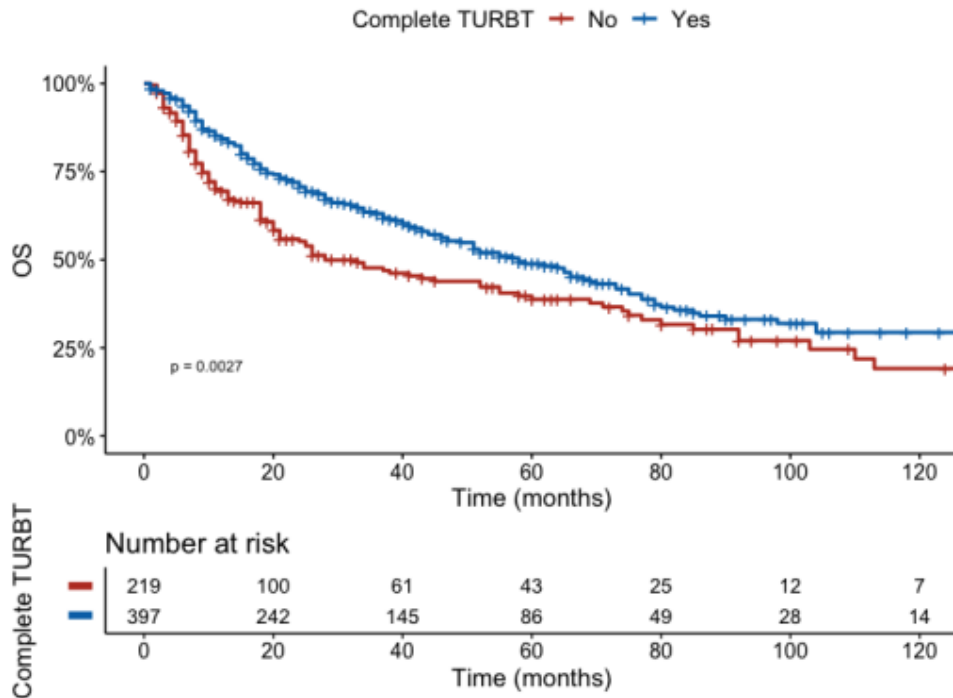
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  - cT stage
  - Hydronephrosis
  - Complete TURBT
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## Results - Survival Analysis

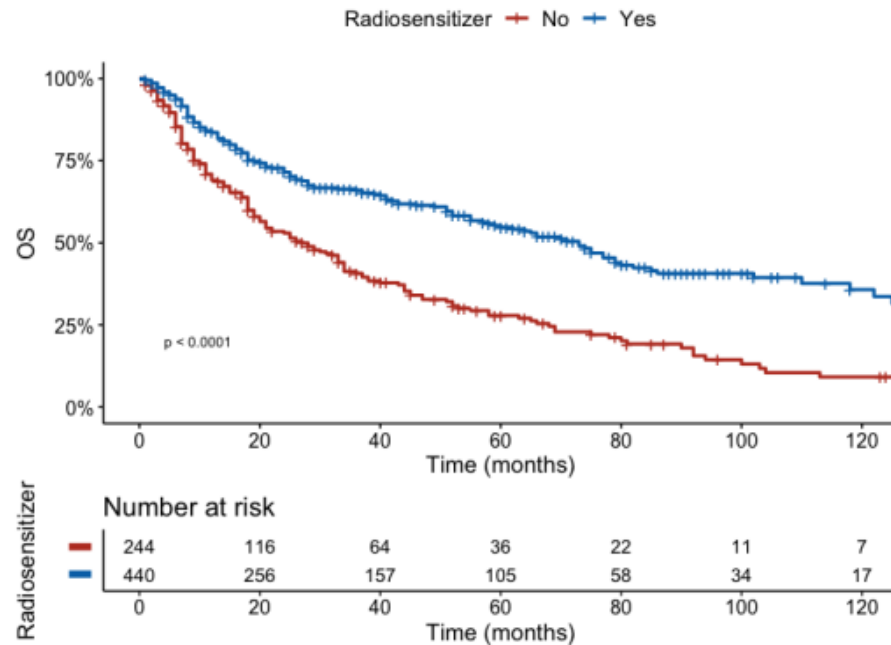
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## Results - Survival Analysis

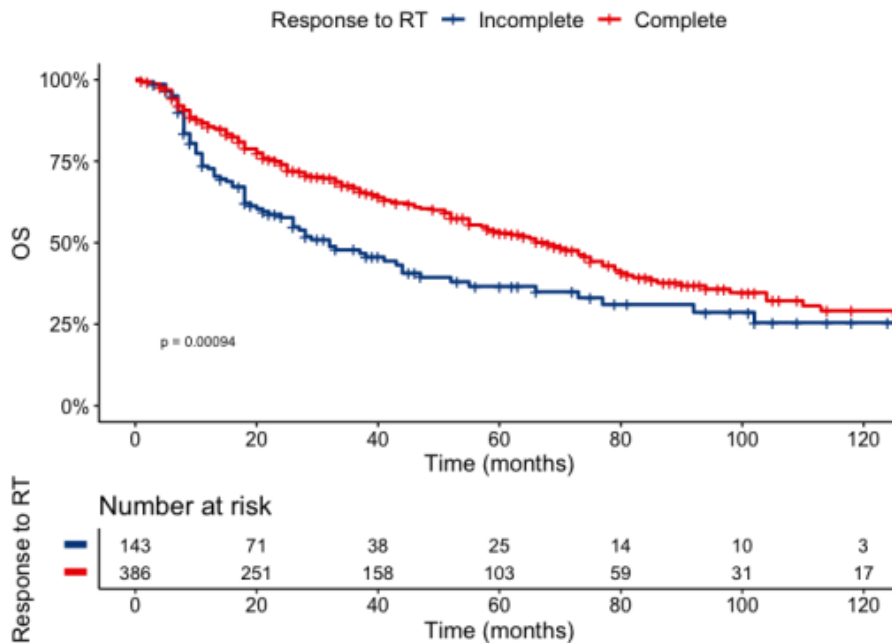
- Significant predictors of OS
  - cT stage
  - Hydronephrosis
  - Complete TURBT
  - Concurrent Radiosensitizer
  - Complete Response





## Results - Survival Analysis

- Significant predictors of OS
  - cT stage
  - Hydronephrosis
  - Complete TURBT
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## Results - Survival Analysis

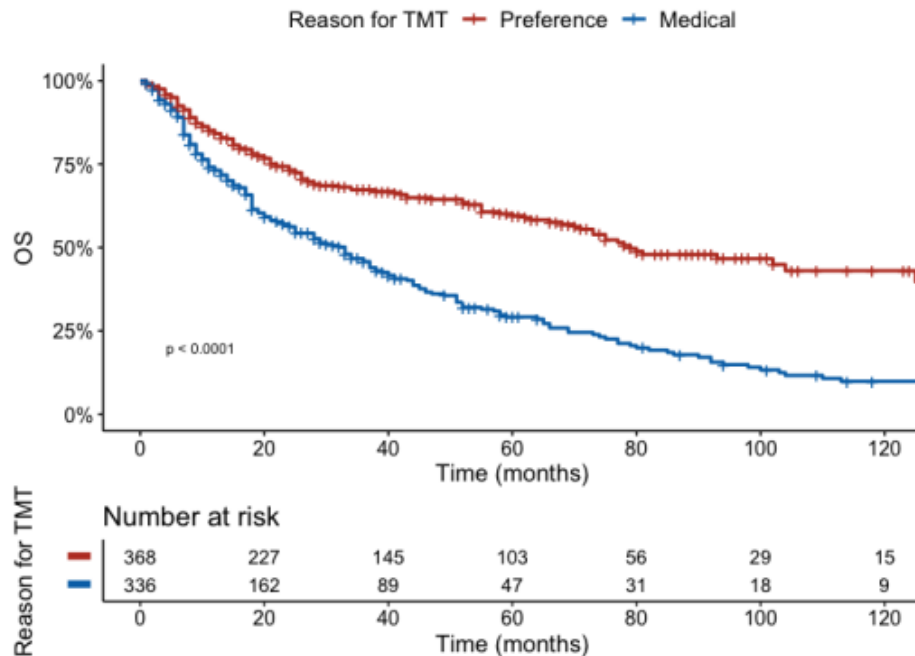
- Reason for RT

Median OS

79m (95% CI 71 - 127)

vs.

33m (95% CI 25 - 38)





## Results - Survival Analysis

- Among surgical candidates Patients who opted for RT  
Same predictors for better OS
  - cT2 Stage ( $p = 0.004$ )
  - No hydronephrosis ( $p = 0.003$ )
  - Complete TURBT ( $p = 0.028$ )
  - Use of concurrent chemotherapy ( $p < 0.001$ )
  - Complete initial response ( $p = 0.049$ )



## Conclusion

- Largest database on curative RT for MIBC
- Our findings are consistent with current literature
- Further investigations