

Oncologic Results of High Intensity Focused Ultrasound (HIFU) in Intermediate Risk Prostate Cancer : A First North-American Experience

Alexis Rompré-Brodeur*, Gautier Marcq, Justin Colavincenzo, Come Tholomier, Maurice Anidjar, Frank Bladou

Presented by **Alexis Rompre Brodeur**

McGill University, Canada

Introduction

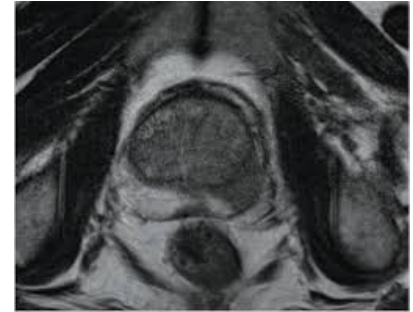
- High intensity focused ultrasound (**HIFU**) is an accepted therapeutic option in the treatment of very-low and low risk prostate cancers.
- This treatment is still deemed **experimental** in **intermediate** risk prostate cancer – clinically significant prostate cancer.



Introduction

- Oncologic results for intermediate-risk PCa patients are lacking at the moment.

Residual CS-PCa rates?
Risk factors for retreatment or salvage treatment?



Introduction - Objectives

Analyse the oncological results of HIFU treatments in intermediate risk PCa patients.

Methods

- North-American **Monocentric retrospective** study, IRB approved
- May 2015 to October 2018

Inclusion :

- **Unilateral GGG 2 or 3** lesion
- Lesion **visible on MRI**
- **PSA<15 ng/mL**

- HIFU: hemi-ablation, focal or ultrafocal treatment
- Systematic mpMRI and random+targeted biopsies prior to inclusion and at 6 months
- Clinically significant Prostate Cancer defined as presence of Gleason **grade 4** (\geq GGG2)

- Oncologic results as well as predictive factors for treatment failure were estimated using Chi-2 test, student t-test and logistical regression.

Results

- **67** patients included
- **65% GGG2** and 35% GGG3
- Median PSA= 6.5 ng/mL (SD: 5,4 - 8,9)
- **Median treated volume** was of 26% (19-36%) of the whole gland volume
- Median **follow-up** of **30 months**

Results

- **At 6 months**, the rate of residual **CS-PCa** in the treated zone was **18%**
- **At 6M** the rate of **CS-PCa** in patients with lesion
 - **GGG2** was of **10%**
 - **GGG3** was of **34%**

$p=0.0194$
- **The 6M MRI** showed a **Pi-RADS \geq 4** in **34%** of patient vs **95% pretreatment**

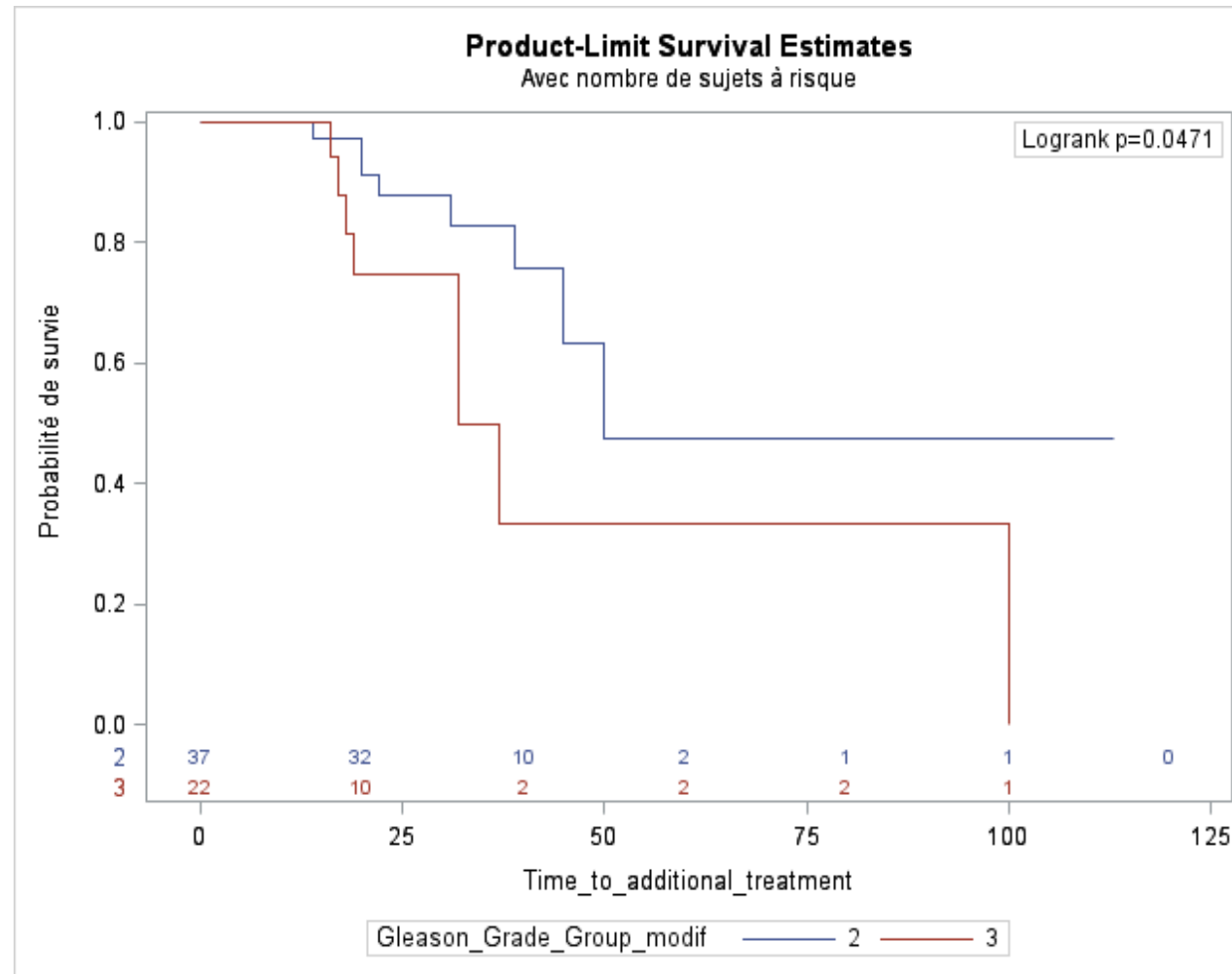
Results

- **At 2 Years**
- Salvage treatment-free survival rate in:
 - **GGG2** was of **88%**
 - **GGG3** was of **75%**

Results – Salvage treatment-free survival rate

GGG	time (months)	OR (%)	CI 95%	
2	12	97,3	82,3	99,6
	24	88,0	70,9	95,3
	36	82,8	62,3	92,7
	60	47,4	14,4	75,0
3	12	94,1	65,0	99,1
	24	74,8	45,8	89,7
	36	49,8	17,7	75,6
	60	33,2	6,2	64,7

Results – Salvage treatment-free survival rate according to GGG



Results – Multivariate analysis

- In multivariate analyse, the **GGG** is **predictive** of salvage treatment
→ **GGG3** : **RR 3.99** $p=0.012$
- **Age** and **volume treated %** are also possible variables of interest.
→ Age: RR 0,915 $p=0.543$
→ Volume treated: RR 0,954 $p=0.703$

Results – Multivariate analysis

- Are **not** predictive:
 - Type** of treatment: hemiablation vs focal vs ultrafocal
 - Pretreatment **Pi-RADS** score
 - Prostatic **volume**
 - PSA** at diagnosis

Discussion – Take Home Message

High success rate in patient with GGG2.

→ **88%** are free of salvage treatment at **2 years**.

High rates of Pi-RADS \geq 4 at M6

A **GGG 3** lesion is highly predictive of requiring a **salvage treatment**

→ **RR 3,99**

Discussion – Limitations

- **Monocentric retrospective** cohort design
- **Lack of power** in the multivariate analysis to identify other potential predictive factors of salvage treatment.



Conclusion

- High success rate in patient with GGG2
- **Oncologic data** are **unfavorable** to its use in patients with **GGG3** as there are close to **34%** of patients will have residual CS-PCa in the treated zone.
- Patient with **GGG3** have to be very carefully selected and should be oriented towards **conventional radical treatments**.
- These data need to be validated with larger prospective cohorts



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