

# Should we target all visible areas at mpMRI suspicious for clinically significant prostate cancer in addition to the index lesion? Results from a two-institution series

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## INTRODUCTION

In the context of prostate mp-MRI, it is well standardized to report detailed MRI characteristics of the so-called index lesion (IL) defined as the lesion with either the highest PI-RADS score or the largest size. However, little is known about the clinical significance of other visible areas at mp-MRI suspicious for clinically significant prostate cancer (csPCa) in addition to the IL.

We hypothesized that smaller, lower PI-RADS score lesions are of no clinical significance in these patients.

## MATERIALS AND METHODS

We relied on a cohort of 1760 men who underwent mp-MRI of the prostate with subsequent fusion targeted (TBx) and concomitant systematic biopsy at two tertiary referral centres between 2013 and 2019.

For this study purposes, we identified 347 men with at least one suspicious lower PI-RADS lesion (secondary lesion) at mp-MRI in addition to the IL, defined as the lesion with the highest PI-RADS score.

The study outcome was the added value of secondary lesions in the detection of csPCa (defined as Gleason score  $\geq 7$ ). For this aim, we included number and PI-RADS (<4 vs  $\geq 4$ ) of all secondary lesions and number of targeted cores to these secondary lesions in multivariable models predicting the presence of csPCa at TBx. All analyses were adjusted for age, PSA, prostate volume, PI-RADS (<4 vs  $\geq 4$ ) and number of targeted cores of the IL.

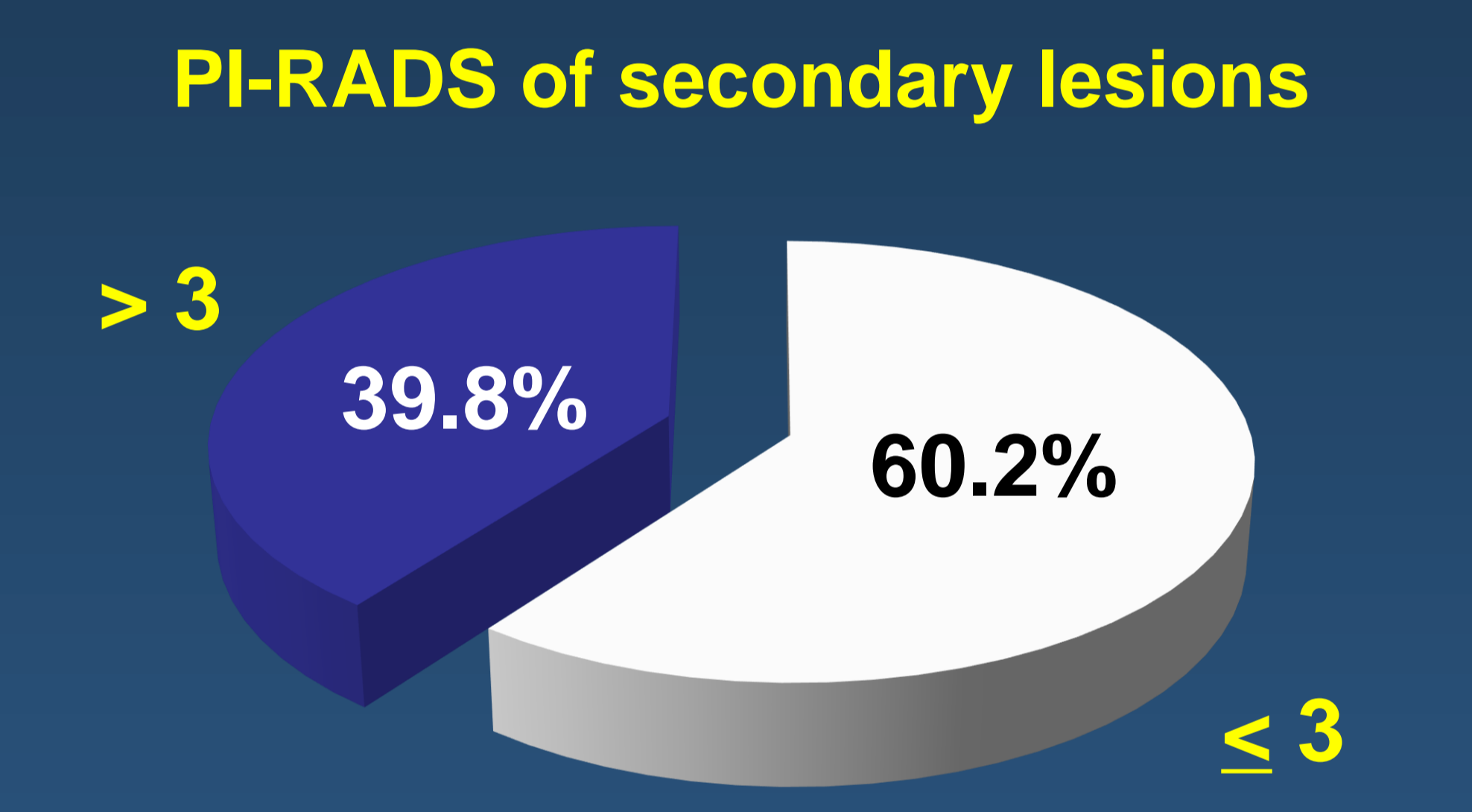
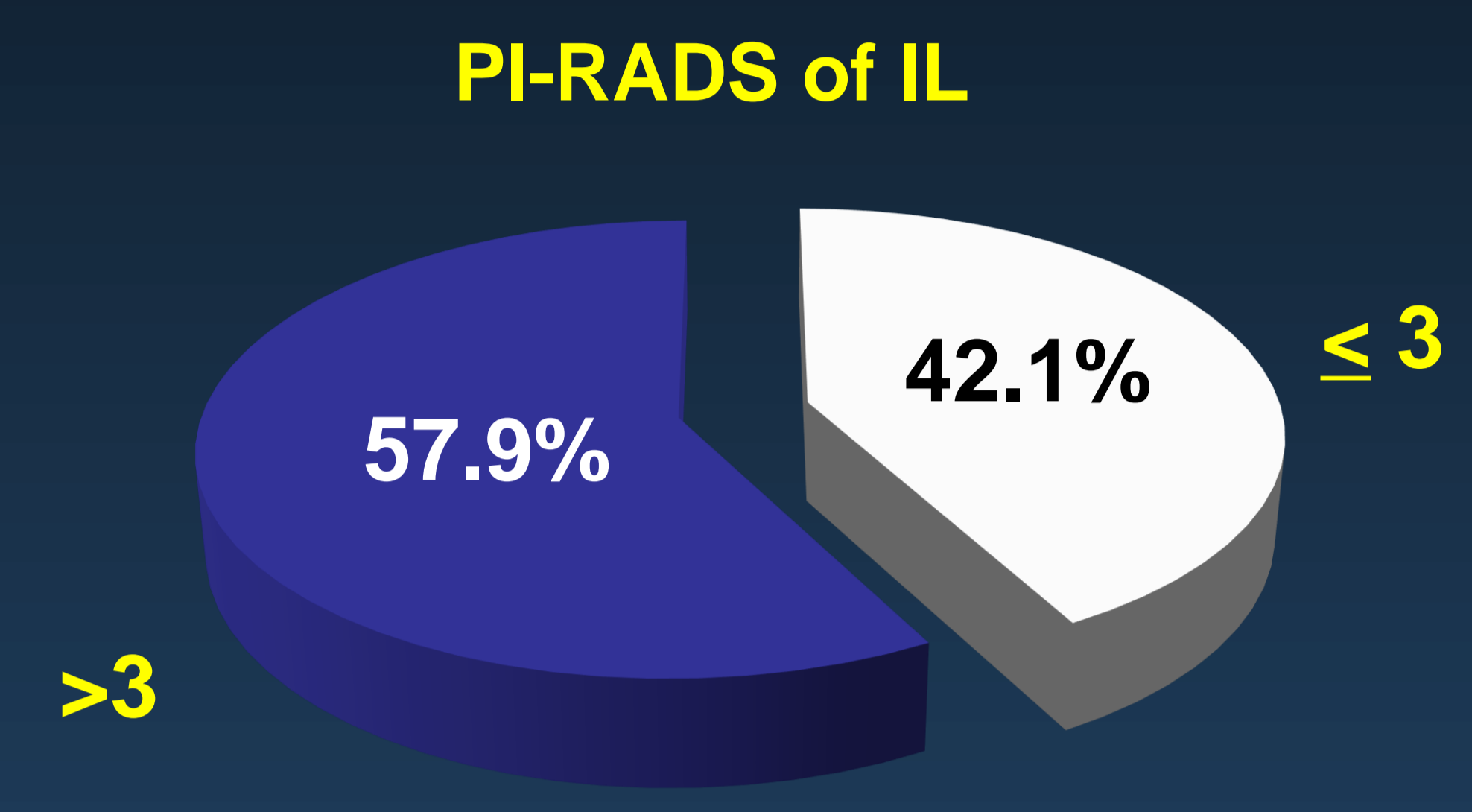
## CONCLUSIONS

In this study including men with multiple lesions at mp-MRI, we demonstrated that the number, the PI-RADS and the number of targeted cores of secondary lesions did not improve the ability to detect csPCa at targeted biopsy. Therefore, for diagnostic purposes, biopsy of these lesions can be avoided and only the IL should be targeted and taken into account.

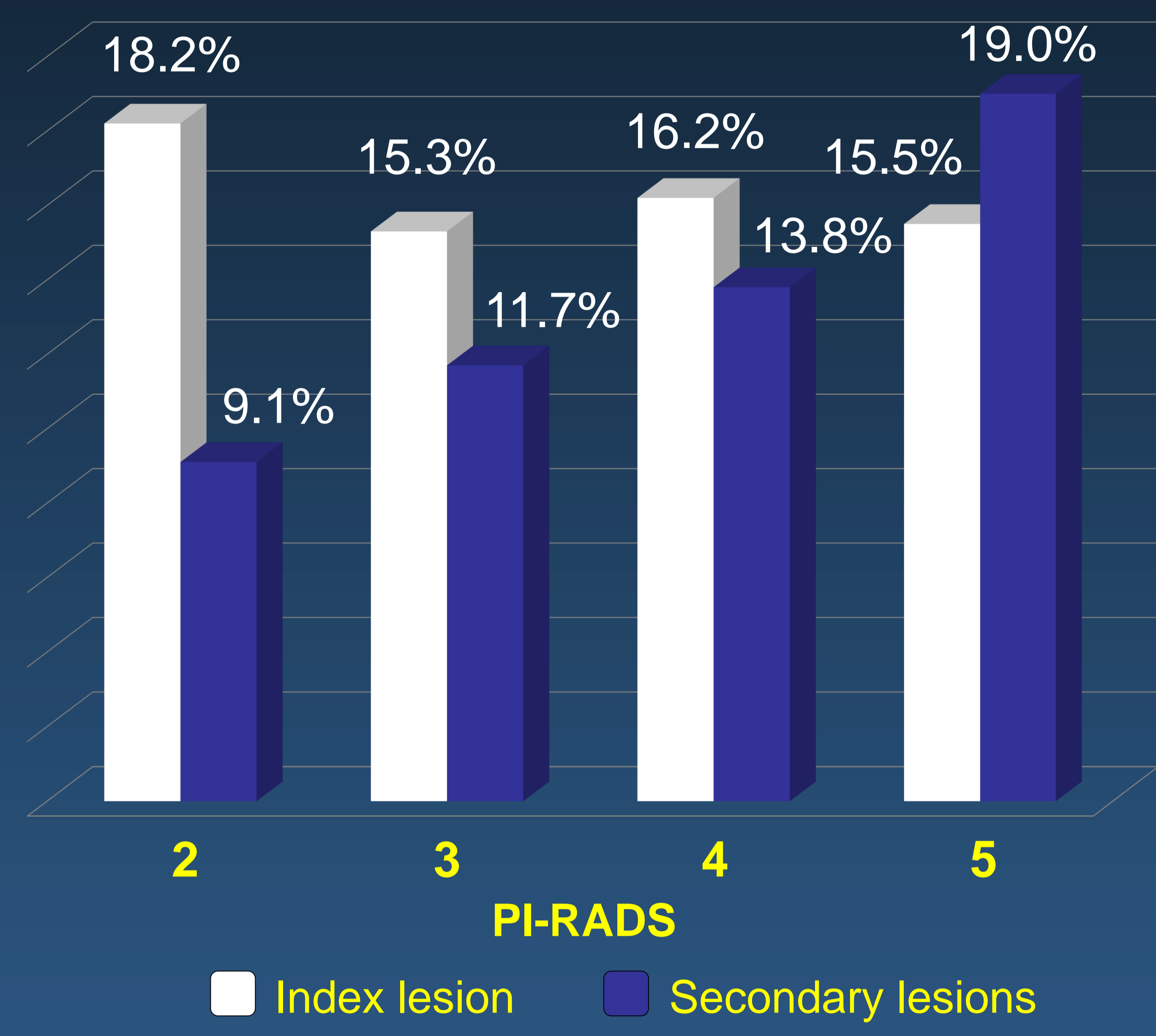
## RESULTS

### Patients characteristics

Variables		Overall
Age, years	Median (IQR)	66.2 (60.9-72)
PSA, ng/mL	Median (IQR)	6.7 (4.8-9.7)
Prostate volume, cc	Median (IQR)	46 (36-62.6)
Number of visible lesions at MRI	2	319 (91.9)
	3	26 (7.5)
	4	2 (0.6)
IL Volume, cc	Median (IQR)	0.52 (0.29-1.10)
Secondary lesion volume, cc	Median (IQR)	0.27 (0.14-0.50)
Number of TBx cores in IL	Median (IQR)	4 (2-5)
Number of positive TBx cores in IL	Median (IQR)	1 (0-3)
Number of TBx cores in secondary lesions	Median (IQR)	4 (2-5)
Number of positive TBx cores in secondary lesions	Median (IQR)	0 (0-2)
Clinical stage	1	219 (63.1)
	2	31 (8.9)
	3	14 (4)
	4	11 (3.2)
	5	111 (32)
Overall PI-RADS	2	167 (48.1)
	3	58 (16.7)
	4	61 (17.6)
	5	132 (38)
	6	20 (5.8)
Gleason Score at biopsy	7	14 (4)
	8	1 (0.3)
	9	1 (0.3)
csPCa at SBx	Yes	131 (37.8)
csPCa at TBx	Yes	148 (42.7)
Upgrading at TBx of secondary lesions		33 (9)
csPCa only in secondary lesions		17 (4)



### Rates of csPCa



### Multivariable logistic regression model predicting csPCa

Predictors	OR (95% CI)	P-value
Age	1.06	0.007
PSA	1.08	0.009
Prostate volume	0.97	<0.001
Number of visible lesions at MRI	1.32	0.66
Number of IL targeted cores	1.04	0.009
Number of secondary lesions targeted cores	0.93	0.42
PI-RADS of IL		
≤3	Ref	0.004
>3	2.57	
PI-RADS of secondary lesions		
≤3	Ref	0.32
>3	1.38	