Pathological findings at radical prostatectomy of biopsy naïve men submitted to MRI-Targeted biopsy alone without standard systematic sampling

S. Luzzago[1,2], M. Catellani[1], F.A. Mistretta[1,2], A. Conti[1,2], E. Di Trapani[1], A. Brescia[1], P. Pricolo[3], S. Alessi[3], F. Verweij[1], M. Ferro1, D.V. Matei[1], G. Renne[4], G. Petralia[3], G. Musi[1], O. de Cobelli[1,2]

[1]Istituto Europeo di Oncologia (IEO), Dipartimento di Urologia, Milano [2]Università degli Studi di Milano

[3]Istituto Europeo di Oncologia (IEO), Dipartimento di Radiologia, Milano

[4]Istituto Europeo di Oncologia (IEO), Dipartimento di Patologia, Milano

INTRODUCTION

Two prospective randomized trials have endorsed the use of mpMRI as a triage test for PCa diagnosis in biopsy-naïve men. Moreover, the PRECISION trial assessed the superiority of targeted biopsy strategy (without standard cores) over systematic sampling for the detection of csPCa. We evaluated pathological findings at prostatectomy (RP) of biopsy naïve men submitted to MRI-Targeted biopsy alone

MATERIALS AND METHODS

Patient population

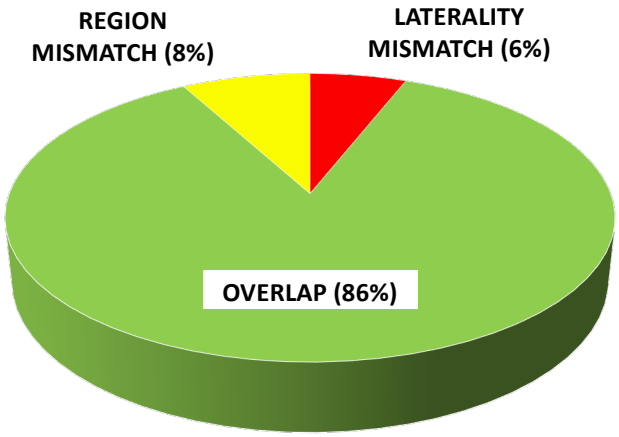
- From 2016 to 2018, **138 biopsy naïve men with PCa suspicion** (rising PSA, positive DRE etc.) and a **positive mpMRI (PI-RADS≥3)**
- **In bore MRI-targeted biopsies** (2-5 cores per area) of lesions suggestive for PCa, without standard sampling.
- **63 patients were then submitted to RP.**

Statistical analyses

- **Logistic regression analyses** tested predictors of **discordance between bioptic and pathological Grade Group (GG).**
- **Cancer location and tumor volume (TV)** in the whole specimen was assessed.
- We evaluated **how many csPCa (GG≥3) were underestimated (not seen at biopsy) and overestimated (not confirmed at RP)** by performing only MRI targeted biopsy

RESULTS

Population characteristics	
Age (years)	63 (57-69)
PSA (ng/ml)	6.7 (4.8-9.4)
PSA-D	0.12 (0.09-0.2)
Index Lesion PI-RADS score (%)	
3	13 (20%)
4	35 (55.5%)
5	15 (24.5%)
Performed cores (n)	4 (3-5)
Positive cores (n)	2 (1-4)
ISUP Grade group (%)	
1	25 (39.5%)
2	24 (38%)
3	10 (16%)
4	3 (4.5%)
5	1 (2%)



Graph 1. Tumor location at RP

- Median TV at RP was 5.5 (2.6-9) ml
- Perfect overlap: 54 (86%)
- Laterality mismatch (left vs. right): 4 (6%)
- Region mismatch (apex vs. intermediate vs. base): 5 (8%)

	GG DISCORDANCE		UNDER-/OVERESTIMATION	
	OR (95% C.I.)	p-value	OR (95% C.I.)	p-value
Max positive core length (mm)	**1.26 (1.03-1.6)**	**0.047**	1.15 (0.88-1.5)	0.29
IL PI-RADS score				
3	Ref.	Ref.	Ref.	Ref.
4	0.5 (0.3-5.2)	0.62	0.27 (0.02-2.89)	0.28
5	1.65 (0.1-25.4)	0.71	0.78 (0.04-15)	0.87
Number of targets (1 vs.2)	0.98 (0.18-5.2)	0.98	0.98 (0.13-7)	0.99
PSA-D	2.1 (0.32-3.58)	0.18	1.72 (0.04-72)	0.77
Number of cores performed				
2	Ref.	Ref.	Ref.	Ref.
3	1.2 (0.43-5.3)	0.1	1.67 (0.76-7.1)	0.74
4	1.94 (0.7-5.4)	0.2	1.74 (0.05-24.2)	0.75
5	65 (0.49-101)	0.09	3.58 (0.02-36.7)	0.6
Positive cores (1 vs. ≥2)	0.46 (0.17-1.23)	0.12	0.64 (0.2-1.9)	0.42

Table 2. Logistic regression analysis

- Overall, 19 (30%), 16 (25%), 4 (6.5%) and 2 (3%) men had csPCa, ECE, SVI and LNI at RP
- Discordance rate between bioptic and pathological GG : 44% (28/63)
- 5 (18%) and 23 (82%) men had GG downgrading and upgrading
- 3 (5%) and 7 (11%) csPCa were overestimated and underestimated by performing biopsies only in the target zone

CONCLUSION

Roughly half of patients submitted to targeted biopsy strategy showed a GG discordance between bioptic and RP specimens. Moreover, 11% of patients are affected by csPCa that is misdiagnosed if standard biopsy cores are avoided. Future studies with larger cohorts of patients are needed to find predictors of csPCa underestimation.