

Diagnostic performance of Fusion (US/MRI guided) prostate Biopsy: comparison between elastic versus rigid fusion system

*Mariaconsiglia Ferriero*¹, Cristian Fiori², Alfredo Maria Bove¹, Riccardo Mastroianni³, Gabriele Tuderti¹, Umberto Anceschi¹,
Brassetti Aldo¹, Francesco Porpiglia², Sabrina Decillis², Enrico Checcucci², Guaglianone Salvatore¹, Michele Gallucci³,
Giuseppe Simone¹.

¹ Regina Elena National Cancer Institute, Dept. of Urology, Rome, Italy

² San Luigi Hospital, University of Turin, Dept. of Urology, Orbassano, Italy

³ Policlinico Umberto I, Sapienza University, Dept. of Urology, Rome, Italy



Materials and Methods

615 Prostate Fusion Biopsy (PFB) performed transrectally

using 2 different Fusion Systems (Rigid and Elastic)

prospectively collected in **2** different centers

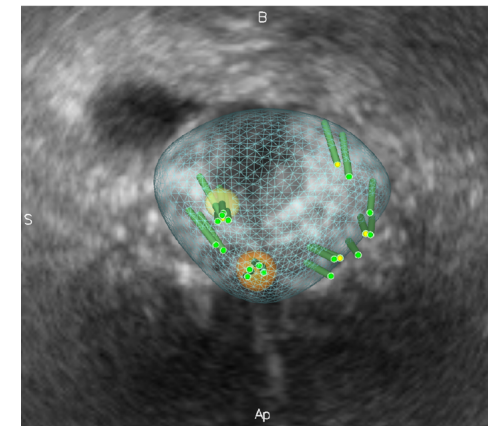
Rigid PFB 359 (Biojet)

Elastic PFB 265 (Koelis)

The two groups were compared for the main clinical features.

Detection rate (DR) for any prostate cancer (PCa) and clinically significant (cs) PCa were compared and stratified for PIRADS Score.

Chi-square or *Fisher exact test* and *Student t* test were used to compare variables



Results

Table 1	Rigid FPB (n = 359)	Elastic FPB (n = 265)	p value*
Age, Median (IQR)	70 (65-75)	66 (59-71)	0.08
PSA, ng/ml Median (IQR)	8 (5.8-20)	7.5 (5.2-10.8)	0.48
Prostate Volume, ml Median (IQR)	53.9 (42.9-58.3)	54 (35-59.3)	0.810
N° of ROI, Median (IQR)	1 (1-2)	1 (1-2)	0.96
ROI Max diameter, mm Median (IQR)	10 (8-15)	8 (6-13)	0.07
DRE N (%)	79 (22)	53 (20)	0.72
Previous Biopsy N (%)	43 (11.9)	41 (15.5)	0.044
PI-RADS Score, N (%)			
3	97 (27)	51 (19.2)	
4	192 (53.5)	152 (57.4)	0.214
5	70 (19.5)	62 (23.4)	
Total Cores, Median (IQR)	15 (8-17)	22 (19-30)	< 0.001
Target Cores, Median (IQR)	6 (5-8)	6 (4-8.5)	0.754

Table 2

Per patient Detection rate (%)	EFPB	RFPB	p
Any G score	71.3	59.3	0.002
G score≥7	46.8	52.1	0.196
Per Core Detection Rate (%)			
Any G score	22.5	20	0.164
G score≥7	17.5	19.1	0.687

Table 3

Detection rate (%)	PI-RADS score	EFPB N (%)	RFPB N (%)	p
	3	17/51 (33.3)	29/97 (29.9)	0.711
Any GS	4	117/152 (77)	121/192 (63)	0.007
	5	55/62 (88.7)	63/70 (90)	0.810
	3	5/51 (9.8)	21/97 (21.6)	0.110
GS>6	4	71/152 (46.7)	105/192 (54.7)	0.158
	5	48/62 (77.4)	61/70 (87.1)	0.171

Conclusions

Fusion PB guarantees high diagnostic accuracy for csPCa, regardless the fusion technology.
Prospective randomized study are needed to confirm these data.

