

## TABLES:

**Table-1:** MpMRI Protocols (1.5T Siemens MagnetomAera)

MpMRI Protocols (1.5T Siemens Magnetom Aera)										
	sequence	slice thickness (mm)	number of slice	voxel size (mm <sup>3</sup> )	field of view(mm)	TE (ms)	TR (ms)	gap (mm)	b value*	Flip Angle
T2W Coronal	haste	5 mm	30	1.4x1.4x5	360x360	92	1400	1 mm		180
T2W axial	haste	6 mm	30	1.5x1.5x6	380x380	91	1400	1.2mm		180
T2W sagittal	haste	5 mm	30	1.2x1.2x5	300x300	92	1400	0 mm		180
T2W Coronal	TSE	3 mm	20	0.7x0.7x3	224x224	96	5490	0 mm		160
T2W axial	TSE	3 mm	24	0.6x0.6x3	200x200	101	6620	0 mm		160
DWI		3 mm	20	0.8x0.8x3	200x200	80	5000	0 mm	50 800 1200 1800 2000**	-
T1W axial Lymph node	TSE	4 mm	26	0.9x0.9x4	300x300	20	552	0.8mm		167
T1Map axial	vibe tra	3,5 mm	20	1.4x1.4x3.5	260x260	1,9	4,11	0 mm		2 15
T1W DCE-MRI***	vibe tra	3,5 mm	20	1.4x1.4x3.5	260x260	1,58	4,46	0 mm		12
postcontrast T1W axial	TSE	4 mm	34	0.6x0.6x4	360x360	11	606	0.8mm		180
<b>HASTE:Half-fourier acquisition single shot turbo spin echo TSE:Turbo Spin Echo TE:Time of Echo TR:Time of Repetition</b> <b>VIBE TRA:Volumetric interpolated breath-hold examination T1W: T1-Weighted T2W: T2-Weighted DWI: Diffusion-Weighted Imaging **:Calculated B value</b>										

\*There is no currently widely accepted optimal “high b-value” beyond the requirement for a DW image set with a b-value  $\geq 1,400 \text{ sec/mm}^2$ .<sup>9</sup>

\*\*\*In dynamic contrast enhancement imaging (DCE-MRI), a gadolinium-based contrast agent with an automatic injector at 0.1-0.2 mmol/kg concentration and 2-4 mL/s injection rate via IV were used and T1 axial sections were obtained over 240-300 sc. duration with one every 7 sc. before, during, and after administration including the entire prostate.

**Table-2:** Distribution of PI-RADS scores given to lesions by two readers.

<b>Variables</b>	<b>PI-RADS Score of 1<sup>st</sup> Reader</b>					<b>Total</b>
<b>PI-RADS Score of 2<sup>nd</sup> Reader</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	
<b>1</b>	<b>5</b>	0	0	0	0	5
<b>2</b>	0	<b>2</b>	14	1	0	17
<b>3</b>	0	2	<b>37</b>	5	1	45
<b>4</b>	0	0	2	<b>17</b>	2	21
<b>5</b>	0	0	1	2	<b>15</b>	18
<b>Final PI-RADS Score</b>	5	4	54	25	18	106

**Table-3:** Descriptive statistics of patients included in the study.

Characteristics of patient	Histopathological diagnosis		p
	Malignant(n:43)	Benign (n:63)	
	Average±Standard Deviation	Average±Standard Deviation	
	Median (25p-75p)	Median (25p-75p)	
Age	65.24±7.90	62.07±6.90	0.053
	65.0(59.75-70.0)	62.50(57.0-66.0)	
PSA	15.24±24.12	8.75±7.52	0.259
	7.56(5.28-11.19)	6.94(4.00-9.71)	
Prostate Volume	46.11±29.21	75.94±39.51	<0.001
	39.37(30.74-50.53)	72.50(44.87-100.75)	
PSAd	0.37±0.55	0.13±0.121	<0.001
	0.20(0.11-0.33)	0.11(0.07-0.147)	

Prostate Volume and PSAd values are statistically significant for malign and benign lesion differentiation.

PSA: prostate specific anjigen PSAd: PSA density

**Table-4:** Statistical parameters for the cancer detection in Peripheral Zone(PZ) and Transitional Zone(TZ).

Zone	Sequence	Cut-off Value	Sensitivity	Specificity	PPV	NPV	Accuracy
<b>PZ</b>	<b>T2W</b>	PI-RADS $\geq 3$ positive	100%	27.78%	51.85%	100%	59.38%
		PI-RADS $\geq 4$ positive	32.14%	97.22%	90%	64.81%	68.75%
	<b>DWI</b>	PI-RADS $\geq 3$ positive	92.86%	13.89%	45.61%	71.43%	48.44%
		PI-RADS $\geq 4$ positive	46.43%	91.67%	81.25%	68.75%	71.88%
	<b>MpMRI (T2W, DWI and DCE)</b>	PI-RADS $\geq 3$ positive	100%	11.11%	46.67%	100%	52.98%
		PI-RADS $\geq 4$ positive	71.43%	72.22%	66.67%	76.47%	71.87%
<b>TZ</b>	<b>T2W</b>	PI-RADS $\geq 4$ positive	33.33%	90.91%	50%	83.33%	78.57%
	<b>DWI</b>	PI-RADS $\geq 4$ positive	33.33%	59.09%	18.18%	76.47%	53.57%
	<b>MpMRI (T2W, DWI and DCE)</b>	PI-RADS $\geq 4$ positive	33.33%	90.91%	50%	83.33%	78.57%

Statistical parameters when the threshold value for cancer detection PI-RADS  $\geq 3$  and PI-RADS  $\geq 4$  taken as positive in PZ and TZ when T2W and DWI are independently evaluated. In TZ, there was no patient with a PI-RADS score  $< 3$ , so the diagnostic parameters for this variable could not be calculated.

PZ: peripheral zone TZ: transitional zone PPV: positive predictive value NPV: negative predictive value  
MpmRI: multiparametric magnetic resonance imaging T2W: T2Weighted imaging DWI: diffusion-weighted  
imaging DCE: dynamic contrast enhancement imaging

**Table-5:** Statistical parameters for the cancer detection in the whole gland

	<b>Cut off value</b>	<b>Sensitivity</b>	<b>Specificity</b>	<b>PPV</b>	<b>NPV</b>	<b>Accuracy</b>
<b>T2W</b>	PI-RADS $\geq 3$ positive	100%	22.58%	47.25%	100%	53.77%
	PI-RADS $\geq 4$ positive	46.51%	93.75%	45.26%	94.04%	71.43%
<b>DWI</b>	PI-RADS $\geq 3$ positive	95.35%	14.52%	43.62%	81.82%	47.62%
	PI-RADS $\geq 4$ positive	54.55%	80.65%	23.84%	94.10%	69.81%
<b>DCE</b>	PI-RADS $\geq 3$ positive	79.07%	68.85%	64.15%	82.35%	80.21%
<b>T2W and DWI (biparametric)</b>	PI-RADS $\geq 3$ positive	100%	23.81%	47.25%	100%	54.85%
<b>MpMRG (T2W, DWI and DCE)</b>	PI-RADS $\geq 3$ positive	100%	12.90%	44.33%	100%	49.06%
	PI-RADS $\geq 4$ positive	72.09%	80.65%	72.09%	80.65%	77.36%

Sensitivity, specificity, negative predictive value, and positive predictive values for prostate cancer detection are shown for T2W, DWI independently and T2W-DWI (biparametric) and MpMRI, when PI-RADS  $\geq 3$  and  $\geq 4$  scores taken as positive accordingly PI-RADS v2.1.

PPV: positive predictive value NPV: negative predictive value MpMRI: multiparametric magnetic resonance imaging T2W: T2Weighted imaging DWI: diffusion-weighted imaging DCE: dynamic contrast enhancement imaging

**Table-6:** Assessments of lesions' ISUP grades according to their PI-RADS category.

	<b>BENIGN</b>	<b>ISUP 1</b> <b>(37.2%)</b>	<b>ISUP 2</b> <b>(13.9%)</b>	<b>ISUP 3</b> <b>(13.9%)</b>	<b>ISUP 4</b> <b>(13.9%)</b>	<b>ISUP 5</b> <b>(20.9%)</b>
	n					
<b>PI-RADS 1</b>	5	0	0	0	0	0
<b>PI-RADS 2</b>	4	0	0	0	0	0
<b>PI-RADS 3</b>	42	12	0	0	0	0
<b>PI-RADS 4</b>	11	4	4	3	2	1
<b>PI-RADS 5</b>	1	0	2	3	4	8
<b>TOTAL</b>	<b>63</b>	<b>16</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>9</b>

There was a positive correlation between the PI-RADSv2.1 score and the ISUP score.

**Table-7:** The correlation between ISUP Grades and DWI scores of PI-RADS 4 lesions in the Peripheral Zone

PI-RADS 4		ISUP Grade					
DWI score	DCI Status	1	2	3	4	5	Total
3	Upgraded by +DCI	4(57.1%)	2(28.6%)	0(0.0%)	0(0.0%)	1(14.3%)	7
4	NA	0(0.0%)	2(33.3%)	2(33.3%)	2(33.3%)	0(0.0%)	6
<b>Total</b>		<b>4</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>13</b>