

Supplemental Table 1: Patient characteristics

Patient No	Age	Height	Weight	Stage*	GS*	PSA nadir	PSA velocity**	PSA**	PSA to RM2 PET (days)	BCR to RM2 PET (months)	Conventional imaging**	Conventional imaging to RM2 PET (days)
1	83	5'4"	167	II	5+4	<0.05	6.45	18.7	3	40	CT A/P ¹⁸ F NaF PET/CT	45
2	69	5'6"	149	II	3+4	<0.05	2.45	8.6	1	5	MRI P ¹⁸ F NaF PET/CT	34
3	75	5'10"	189	IV	4+5	0.09	2.35	36.4	3	75	CT A/P ⁹⁹ mTc MDP bone scan	45
4	67	6'1"	243	II	3+3	0.14	0.23	6.7	14	51	CT A/P ⁹⁹ mTc MDP bone scan	45
5	72	6'0"	220	III	4+3	1.2	1.28	8.53	6	29	CT A/P ⁹⁹ mTc MDP bone scan	30
6	72	6'1"	170	II	3+4	0.5	1.91	3.70	3	28	CT A/P ⁹⁹ mTc MDP bone scan	10
7	60	6'2"	205	III	3+4	0.26	5.38	11.2	1	13	CT A/P ⁹⁹ mTc MDP bone scan	30
8	79	5'7"	151	I	3+3	0.53	1.86	5.33	3	14	MRI P ¹⁸ F NaF PET/CT	30
9	81	5'7"	172	I	3+4	<0.05	3.21	7.36	15	28	CT A/P ⁹⁹ mTc MDP bone scan	40
10	73	6'0"	209	III	4+4	<0.05	8.68	18.2	22	25	MRI A/P ¹⁸ F NaF PET/CT	45
11	65	5'10"	193	II	4+3	<0.05	0.76	2.33	30	11	MRI A/P ⁹⁹ mTc MDP bone scan	41

12	59	5'9"	194	II	3+3	0.17	0.06	0.27	24	12	CT P ^{99m} Tc MDP bone scan	11
13	70	5'9"	161	II	4+3	0.29	0.41	1.1	28	5	CT A/P ^{99m} Tc MDP bone scan	28
14	59	5'11"	220	IV	4+5	<0.05	0.59	2.07	30	1	CT C/A/P MRI P ^{99m} Tc MDP bone scan	30
15	69	5'6"	135	III	3+4	0.1	0.98	2.07	30	4	MRI P ^{99m} Tc MDP bone scan	7
16	66	5.7"	135	III	4+3	0.15	0.50	3.00	30	41	CT C/A/P MRI A/P ^{99m} Tc MDP bone scan	30
17	73	5'11"	178	II	3+4	0.1	1.90	4.15	30	12	CT C/A/P ^{99m} Tc MDP bone scan	45
18	66	5'5"	152	II	4+5	5.92	2.31	8.30	28	2	CT C/A/P ^{99m} Tc MDP bone scan	25
19	59	5'10"	190	II	4+4	2.65	2.50	3.25	21	3	CT A/P ^{99m} Tc MDP bone scan	22
20	66	5'4"	150	II	5+4	1.46	1.60	10.1	30	60	CT C/A/P ^{99m} Tc MDP bone scan	14
21	62	6'2"	215	II	4+3	0.2	0.14	0.72	3	65	CT A/P ^{99m} Tc MDP bone scan	17
22	59	5'9"	162	II	4+3	0.1	0.12	0.43	30	20	CT C/A/P ^{99m} Tc MDP bone scan	13
23	65	5'8"	125	III	3+4	<0.05	1.98	3.40	7	22	CT C/A/P ^{99m} Tc MDP bone scan	1

24	71	5'9"	190	II	3+4	0.1	0.20	5.80	30	20	CT C/A/P ^{99m} Tc MDP bone scan	29
25	63	6'0"	195	III	4+3	0.1	0.16	2.20	30	19	CT C/A/P MRI P ^{99m} Tc MDP bone scan	30
26	77	5'9"	174	III	5+5	0.3	6.10	119	30	24	CT A/P ^{99m} Tc MDP bone scan	30
27	67	6'1"	188	II	4+3	0.2	0.13	1.58	21	2	CT C/A/P ^{99m} Tc MDP bone scan	6
28	67	5'8"	186	III	4+5	<0.05	0.04	0.70	20	9	CT C/A/P ^{99m} Tc MDP bone scan	20
29	72	6'0"	183	IV	4+3	0.29	1.62	20.4	30	22	CT C/A/P ^{99m} Tc MDP bone scan	32
30	74	6'0"	210	II	4+4	<0.05	2.02	2.27	20	1	CT C/A/P ^{99m} Tc MDP bone scan	28
31	69	6'0"	270	II	4+3	<0.05	0.07	0.37	30	3	CT C/A/P ^{99m} Tc MDP bone scan	11
32	68	6'0"	193	II	5+3	<0.05	2.59	5.79	2	30	CT C/A/P ^{99m} Tc MDP bone scan	30

*: at initial diagnosis

**: at enrollment in the study

Gleason score: GS

Biochemical recurrence: BCR

Conventional imaging: CI

Chest: C

Abdomen: A

Pelvis: P

Supplemental Table 2: Prior treatments, results of the scans and follow-up

No	Treatment prior to enrolment	⁶⁸ Ga-RM2 PET	MRI	F/U (months)	Treatment on F/U	Results of F/U	PET	MRI
1	HT+RT	Retroperitoneal LNs	Retroperitoneal LNs	25	Casodex and Lupron; RT to lymph nodes	MRI showed decreased size and number of retroperitoneal lymph nodes; PSA decreased from 18.7 to <0.05	TP	TP
2	Prostatectomy	Retroperitoneal LNs	Negative	24	Lupron; RT to lymph nodes	PSA initially increased from 8.6 to 10.9 on watch and wait, then decreased to <0.05 after treatment	TP	FN
3	Prostatectomy	Retroperitoneal LNs, pelvis soft tissue mass	Negative	24	Casodex and Lupron	CT showed decrease in size of soft tissue mass and LNs; PSA decreased from 36.4 to 0.27	TP	FN
4	Brachytherapy + HT	Negative	Negative	24	RT to right vas deferens	PSA increased from 6.7 to 12.1; biopsy results: 12 cores negative; right vas deferens showed 4+3; PSA decreased to <0.01 after RT	FN	FN
5	HT+RT	Left supraclavicular LN	Negative	23	Active surveillance	PSA increased from 8.53 to 26.4; biopsy of left supraclavicular LN showed metastatic adenocarcinoma of prostate origin	TP	FN
6	RT	Prostate bed	Negative	24	Brachytherapy to right lobe of prostate	Prostate biopsy showed adenocarcinoma; PSA increased from 3.7 to 12.4 (brachytherapy failure)	TP	FN
7	RT + HT	Prostate (diffuse)	Negative	23	Salvage prostatectomy	Biopsy showed 4+3 (left lateral mid), 4+4 (left lateral apex), 4+4 (left medial mid), 4+4 (left medial apex), 3+3 (right medial mid); PSA decreased from 11.2 to 0.43	TP	FN
8	RT	Pelvic LNs	Negative	23	Casodex and Lupron	PSA increased from 5.33 to 18.3; F/U MRI showed enlarging LNs; PSA decreased to 0.06	TP	FN
9	Prostatectomy	Right seminal vesicle, right pelvic LN	Right pelvic LN	23	Casodex	PSA decreased from 7.36 to <0.05	TP	TP
10	Prostatectomy	C/T/L spine, ribs, pelvis, femora, humeri, mediastinal/retroperitoneal LNs	C/T/L spine, ribs, pelvis, femora, humeri, mediastinal/retroperitoneal LNs	23	Casodex and Lupron	MRI showed bone marrow metastases; PSA decreased from 18.2 to 4.51	TP	TP

11	Prostatectomy	Left pelvic LNs	Negative	19	RT to lymph nodes	PSA decreased from 2.33 to <0.05	TP	FN
12	Prostatectomy	Negative	Negative	17	No F/U available	No F/U available	N/A	N/A
13	Prostatectomy + HT	Prostate bed	Prostate bed	17	Lupron; RT to prostate bed	PSA decreased from 1.1 to <0.05	TP	TP
14	Prostatectomy + RT + HT	Mediastinal LNs	Mediastinal LNs	16	Casodex and Lupron	PSA increased from 2.08 to 5.35; CT showed enlarging mediastinal and hilar LNs; PSA decreased to 0.14	TP	TP
15	Prostatectomy	Right pelvic LN	Negative	16	RT to lymph nodes	PSA decreased from 2.07 to 1.06	TP	FN
16	Prostatectomy	Pelvic LNs	Negative	16	Declined treatment	PSA increased from 3.0 to 3.4	TP	FN
17	Prostatectomy + HT	Negative	Negative	16	RT to lymph nodes	PSA increased to 8.9 on wait and watch strategy; pelvic LNs on ⁶⁸ Ga PSMA-11; PSA decreased to 4.5 after RT	FN	FN
18	Prostatectomy	Pelvic LNs	Pelvic LNs	17	Casodex and Lupron	PSA decreased to <0.05	TP	TP
19	Prostatectomy	Pelvic LNs	Pelvic LNs	15	Active surveillance	PSA increased from 3.25 to 7.9	TP	TP
20	Prostatectomy + RT + HT	Right lung	Right lung	15	Video-assisted thoracoscopic surgery (VATS)	PSA increased to 13.5; lung biopsy showed metastatic adenocarcinoma of prostate origin; PSA decreased to 0.015 after VATS	TP	TP
21	Prostatectomy + RT	Negative	Negative	15	Active surveillance	PSA stable at 0.72	TN	TN
22	Prostatectomy	Negative	Negative	14	Active surveillance	PSA stable at 0.66	TN	TN
23	Prostatectomy + RT + HT	Liver	Negative	14	Casodex and Lupron; RT to liver capsule lesion	MRI (4 months later) showed 1.3 x 0.4 cm lesion along the liver capsule; biopsy showed adenocarcinoma of prostate origin; PSA decreased to <0.01	TP	FN
24	Prostatectomy + RT + HT	Negative	Negative	14	Active surveillance	PSA increased from 5.8 to 25.63	FN	FN
25	Prostatectomy	Negative	Negative	14	Active surveillance	PSA increased from 2.2 to 4.9	FN	FN
26	RT + HT	Left supraclavicular, retroperitoneal LNs	Negative	14	Casodex and Lupron; RT to retroperitoneal lymph nodes	PSA decreased from 119 to 29.9	TP	FN

27	Prostatectomy	Right pelvic LN	Right pelvic LN	14	Lupron	PSA decreased from 1.58 to 1.1	TP	TP
28	Prostatectomy + RT + HT	Negative	Negative	13	Active surveillance	PSA increased from 0.7 to 1.08	FN	FN
29	RT + HT	Right inguinal LNs	Right inguinal LNs	12	RT to lymph nodes	Biopsy showed adenocarcinoma of prostate origin; PSA decreased from 20.4 to <0.008	TP	TP
30	Prostatectomy + RT	Left lung nodule	Left lung nodule	11	Casodex and Lupron	PSA increased from 2.27 to 5.78; nodule too small to biopsy; PSA decreased to 2.92 after starting Casodex and Lupron	TP	TP
31	Prostatectomy + RT	Negative	Negative	9	Active surveillance	PSA increased from 0.37 to 1.1	FN	FN
32	Prostatectomy + RT + HT	Retroperitoneal LNs	Negative	3	Casodex and Lupron	PSA decreased from 5.79 to 1.2	TP	FN

Radiation therapy: RT, Hormone therapy: HT, LN: lymph node; Follow-up: F/U; Not-available: N/A