

**Supplementary Table 1A: Predictors for biochemical failure and clinically significant prostate cancer recurrence on follow up biopsy post hemi-gland cryoablation for prostate cancer.**

	Biochemical failure (PSA nadir + 2ng/mL - Phoenix)				Clinically significant cancer recurrence *			
	Univariate		Multivariable		Univariate		Multivariable	
	HR, CI 95%	p value	HR, CI 95%	p value	HR, CI 95%	p value	HR, CI 95%	p value
<b>Age, years</b>	1.01, 0.97-1.05	0.56	-	-	1.02, 0.98-1.07	0.32	-	-
<b>Prostate volume, cc</b>	1.00, 0.99-1.02	0.74	-	-	0.99, 0.97-1.01	0.36	-	-
<b>PSA, ng/mL</b>	1.10, 1.05-1.15	<b>&lt;0.001</b>	<b>1.06,1.00-1.12</b>	<b>0.048</b>	1.09, 1.03-1.15	<b>0.002</b>	<b>1.10, 1.04-1.16</b>	<b>0.001</b>
<b>PSAD, ng/mL/cc</b>	32.4, 4.41-237.5	<b>&lt;0.001</b>	-	-	32.9, 3.63-298.7	<b>0.002</b>	-	-
<b>PSAD&gt;0.15</b>	1.94, 0.99-3.79	0.05	-	-	1.82, 0.85-3.92	0.13	-	-
<b>PSAD&gt;0.25</b>	2.58, 1.35-4.95	<b>0.004</b>	-	-	3.05, 1.46-6.37	<b>0.003</b>	-	-
<b>Clinical stage, T2 vs T1</b>	1.33, 0.68-2.59	0.40	-	-	1.16, 0.54-2.51	0.69	-	-
<b>Grade groups</b>								
<b>2-5 vs 1</b>	1.19, 0.59-2.42	0.62	-	-	2.32, 0.88-6.10	0.09	2.11, 0.60-7.43	0.25
<b>3-5 vs 1-2</b>	1.38, 0.73-2.59	0.33	-	-	1.73, 0.83-3.56	0.14	-	-
<b>4-5 vs 1-3</b>	0.83, 0.32-2.13	0.70	-	-	0.99, 0.35-2.88	0.99	-	-
<b>Number of cancer core, no</b>	1.08, 0.84-1.39	0.55	-	-	1.12, 0.84-1.50	0.43	-	-
<b>Maximum cancer core length, mm</b>	1.00, 0.93-1.09	0.89	-	-	1.05, 0.96-1.15	0.27	-	-
<b>Maximum cancer core, %</b>	0.99, 0.98-1.00	0.37	-	-	1.00, 0.99-1.01	0.91	-	-
<b>Risk classification</b>								
<b>Low vs High and Intermediate</b>	0.46, 0.18-1.18	0.10	0.60, 0.21-1.52	0.26	0.25, 0.06-1.07	0.06	0.66, 0.10-4.25	0.66
<b>Low vs High</b>	0.49, 0.16-1.56	0.23	-	-	0.23, 0.05-1.13	0.07	-	-
<b>Intermediate vs High</b>	1.09, 0.48-2.54	0.82	-	-	0.87, 0.35-2.16	0.76	-	-
<b>Bilateral cancer</b>	2.49, 0.87-7.09	0.09	1.90, 0.63-5.71	0.25	2.55, 0.77-8.49	0.13	2.59, 0.76-8.79	0.13
<b>Use of neoadjuvant ADT (Yes vs No)</b>	0.96, 0.42-2.18	0.92	-	-	0.78, 0.27-2.25	0.65	-	-

HR, hazard ratio; CI, confidence interval; PSA, Prostate specific antigen; PSAD, PSA density; ADT, androgen deprivation therapy

\* Clinically significant cancer recurrence was defined as Grade Group  $\geq 2$  on follow-up biopsy (including both treated and untreated lobes).

**Supplementary Table 1B: Predictors for radical treatment and treatment failure post hemi-gland cryoablation for prostate cancer.**

	Radical treatment*				Treatment Failure**			
	Univariate		Multivariable		Univariate		Multivariable	
	HR, CI 95%	p value	HR, CI 95%	p value	HR, CI 95%	p value	HR, CI 95%	p value
Age, years	1.02, 0.95-1.09	0.60	-	-	1.00, 0.95-1.06	0.89	-	-
Prostate volume, cc	1.01, 0.98-1.04	0.44	-	-	0.99, 0.97-1.03	0.94	-	-
PSA, ng/mL	1.14, 1.06-1.24	<0.001	<b>1.13, 1.05-1.23</b>	<b>0.002</b>	1.14, 1.07-1.21	<0.001	<b>1.16, 1.08-1.24</b>	<0.001
PSAD, ng/mL/cc	19.6, 0.34-11.0	0.15	-	-	106.4, 7.01-1615	<0.001	-	-
PSAD > 0.15	2.75, 0.74-10.2	0.13	-	-	3.41, 1.13-10.3	<b>0.03</b>	-	-
PSAD > 0.25	2.61, 0.83-8.27	0.10	-	-	3.15, 1.28-7.77	<b>0.01</b>	-	-
Clinical stage, T2 vs T1	0.51, 0.14-1.89	0.31	-	-	0.92, 0.37-2.29	0.86	-	-
<b>Grade Groups</b>								
2-5 vs 1	1.11, 0.33-3.7	0.86	-	-	1.93, 0.64-5.86	0.24	-	-
3-5 vs 1-2	1.39, 0.44-4.34	0.57	-	-	2.61, 1.05-6.51	<b>0.04</b>	<b>3.06, 1.06-8.85</b>	<b>0.04</b>
4-5 vs 1-3	0.52, 0.07-4.07	0.53	-	-	1.02, 0.32-3.83	0.87	-	-
Number of cancer core, no	1.23, 0.75-2.01	0.41	-	-	1.11, 0.76-1.62	0.59	-	-
Maximum cancer core length, mm	1.09, 0.95-1.25	0.21	-	-	1.06, 0.95-1.19	0.26	-	-
Maximum cancer core, %	1.01, 0.99-1.03	0.36	-	-	1.01, 0.99-1.03	0.15	-	-
<b>Risk classification</b>								
Low vs High and Intermediate	0.28, 0.04-2.11	0.21	0.37, 0.05-2.99	0.35	0.17, 0.02-1.31	0.09	0.48, 0.05-4.26	0.51
Low vs High	0.32, 0.03-3.51	0.34	-	-	0.13, 0.02-1.12	0.06	-	-
Intermediate vs High	1.22, 0.26-5.73	0.80	-	-	0.68, 0.24-1.94	0.48	-	-
Bilateral cancer	1.00, 0.85-1.16	0.99	-	-	1.00, 0.85-1.18	0.99	-	-
Use of neoadjuvant ADT (Yes vs No)	1.00, 0.79-1.26	0.99	-	-	0.58, 0.13-2.52	0.47	-	-

HR, hazard ratio; CI, confidence interval; PSA, Prostate specific antigen; PSAD, PSA density; ADT, androgen deprivation therapy.

\* Radical treatment was defined as any whole-gland treatment. \*\* Treatment failure was defined as any whole-gland treatment, initiation of androgen deprivation therapy, metastases or prostate cancer-specific mortality.