

O'Brien BA, Cohen RJ, Ryan A et al. A new pre-operative nomogram to predict minimal prostate cancer: accuracy and error rates compared to other tools for selecting active surveillance patients. J Urol 2011 (in press).

Supplementary Table 1: Comparison of the performance of predictive tools designed to identify patients with minimal prostate cancer who may be suitable for active surveillance.

	No. (%) with MPCa ¹ at prostatectomy	No. (%) predicted for active surveillance ²	No. (%) predicted for immediate treatment	<u>No. (%) of cases predicted for active surveillance that were:</u>		<u>No. (%) of cases predicted for immediate treatment that were:</u>		Sensitivity	Specificity	Predictive Accuracy ⁵ or AUC ⁶ (%)
				Correct (True Positives) (PPV) ³	Incorrect (False Positives)	Correct (True Negatives) (NPV) ⁴	Incorrect (False Negatives)			
Epstein criteria⁷ (n = 2284)	130 (5.7%)	173 (7.6%)	2111 (92.4%)	49 (28.3%)	124 (71.7%)	2030 (96.2%)	81 (3.8%)	37.7%	94.2%	91.0%
PRIAS criteria⁸ (n = 2525)	152 (6.0%)	286 (11.3%)	2239 (88.7%)	81 (28.3%)	205 (71.7%)	2168 (96.8%)	71 (3.2%)	53.3%	91.1%	89.1%
Kattan nomogram⁹ (n = 900)										
<u>Probability cutoff:</u>										
≥ 5%	51 (5.7%)	352 (39.1%)	548 (60.9%)	41 (11.6%)	310 (88.1%)	538 (98.2%)	10 (1.8%)	80.4%	63.4%	80.6%
≥ 10%	51 (5.7%)	252 (28.0%)	648 (72.0%)	39 (15.5%)	213 (84.5%)	636 (98.1%)	12 (1.9%)	76.5%	74.9%	
≥ 15%	51 (5.7%)	221 (24.6%)	679 (75.4%)	38 (17.2%)	183 (82.8%)	666 (98.1%)	13 (1.9%)	74.5%	78.4%	
≥ 20%	51 (5.7%)	168 (18.7%)	732 (81.3%)	32 (19.0%)	136 (80.9%)	713 (97.4%)	19 (2.6%)	62.7%	84.0%	
≥ 25%	51 (5.7%)	138 (15.3%)	762 (84.7%)	31 (22.5%)	107 (77.5%)	742 (97.4%)	20 (2.6%)	60.8%	87.4%	
Chun nomogram¹⁰ (n = 1132)										
<u>Probability cutoff:</u>										
≥ 5%	65 (5.7%)	268 (23.7%)	864 (76.3%)	56 (20.9%)	212 (79.1%)	855 (99.0%)	9 (1.0%)	86.2%	80.2%	90.4%
≥ 10%	65 (5.7%)	190 (16.8%)	942 (83.2%)	52 (27.4%)	138 (72.6%)	929 (98.6%)	13 (1.4%)	80.0%	87.1%	
≥ 15%	65 (5.7%)	166 (14.7%)	966 (85.3%)	48 (28.9%)	118 (71.1%)	949 (98.2%)	17 (1.8%)	73.8%	88.9%	
≥ 20%	65 (5.7%)	146 (12.9%)	986 (87.1%)	44 (30.1%)	102 (69.9%)	965 (97.9%)	21 (2.1%)	67.7%	90.4%	
≥ 25%	65 (5.7%)	112 (9.9%)	1020 (90.1%)	36 (32.1%)	76 (67.9%)	991 (97.2%)	29 (2.8%)	55.3%	92.9%	

MPCa nomogram

(n = 2525)

Probability cutoff:

≥ 5%	152 (6.0%)	630 (25.0%)	1895 (75.0%)	143 (22.7%)	487 (77.3%)	1886 (99.5%)	9 (0.5%)	94.1%	79.5%	93.2%
≥ 10%	152 (6.0%)	515 (20.4%)	2010 (79.6%)	138 (26.8%)	377 (73.2%)	1996 (99.3%)	14 (0.7%)	90.8%	84.1%	
≥ 15%	152 (6.0%)	413 (16.4%)	2112 (83.6%)	129 (31.2%)	284 (68.8%)	2089 (98.9%)	23 (1.1%)	84.9%	88.0%	
≥ 20%	152 (6.0%)	318 (12.6%)	2207 (87.4%)	109 (34.3%)	209 (65.7%)	2164 (98.1%)	43 (1.9%)	71.7%	91.2%	
≥ 25%	152 (6.0%)	241 (9.5%)	2284 (90.5%)	89 (36.9%)	152 (63.1%)	2221 (97.2%)	63 (2.8%)	58.6%	93.6%	
≥ 30%	152 (6.0%)	176 (7.0%)	2349 (93.0%)	73 (41.5%)	103 (58.5%)	2270 (96.6%)	79 (3.4%)	48.0%	95.7%	
≥ 35%	152 (6.0%)	126 (5.0%)	2399 (95.0%)	54 (42.9%)	72 (57.1%)	2301 (95.9%)	98 (4.1%)	35.5%	97.0%	
≥ 40%	152 (6.0%)	77 (3.0%)	2448 (97.0%)	39 (50.6%)	38 (49.4%)	2335 (95.4%)	113 (4.6%)	25.7%	98.4%	
≥ 45%	152 (6.0%)	48 (1.9%)	2477 (98.1%)	22 (45.8%)	26 (54.2%)	2347 (94.8%)	130 (5.2%)	14.5%	98.9%	
≥ 50%	152 (6.0%)	26 (1.0%)	2499 (99.0%)	13 (50.0%)	13 (50.0%)	2360 (94.4%)	139 (5.6%)	8.6%	99.5%	

¹ MPCa = minimal prostate cancer: total tumor volume <0.5cc, organ-confined, with no Gleason pattern 4 or 5.³

² For nomograms this is calculated as the number of men assigned a nomogram-derived probability of MPCa that is equal to or higher than the probability cutoff value.

³ PPV = positive predictive value.

⁴ NPV = negative predictive value.

⁵ Predictive accuracy is calculated for the Epstein and PRIAS criteria as the sum of true positives and true negatives divided by the total number of cases (ie the total proportion that were correctly predicted).

⁶ AUC = Area under the receiver operating curve characteristics, a measure of predictive accuracy that is applicable to logistic regression models. Predictive accuracy for the Kattan, Chun and ASPC nomogram was calculated as the AUC.

⁷ The contemporary Epstein biopsy criteria for predicting MPCa (PSA density <0.15, 2 or less biopsy cores positive for cancer, no core with >50% cancer involvement and no Gleason pattern 4 or 5).¹² Their performance was assessed on 2284 patients in the current study with data available for percent of cancer involvement in individual biopsy cores.

⁸ The inclusion criteria for the PRIAS trial (PSA <10ng/mL, PSA density <0.2, clinical stage <T3, 2 or less biopsy cores positive for cancer, Gleason sum ≤6).⁴ Their performance was assessed on 2525 patients from the current study.

⁹ Performance of the Kattan nomogram for predicting MPCa when validated on a subset of Chun's patient cohort. Data was only available for probability cutoffs up to ≥25%.⁸

¹⁰ Performance of the Chun nomogram for predicting MPCa when applied to Chun's patient cohort. Data was only available for probability cutoffs up to ≥25%.⁸