

# Effect of radical prostatectomy on survival for men with high-risk non-metastatic prostate cancer features selected using STAMPEDE criteria – an EMPaCT study

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## Background

A meta-analysis of two randomized STAMPEDE platform protocol trials concluded that three years of abiraterone acetate in addition to ADT and RT significantly improves metastasis-free survival and overall survival (OS) of high-risk non-metastatic prostate cancer (PCa) and should be considered as a new standard of care. Information of surgery in this patient group is lacking.

## Objectives

The aim of this study was to assess long-term cancer-specific (CSS) and OS of surgically treated patients with STAMPEDE high-risk newly diagnosed non-metastatic PCa.

## Materials & Methods

This is a retrospective, multicenter study in EAU high-risk (but cN0) patients treated with RP and ePLND.

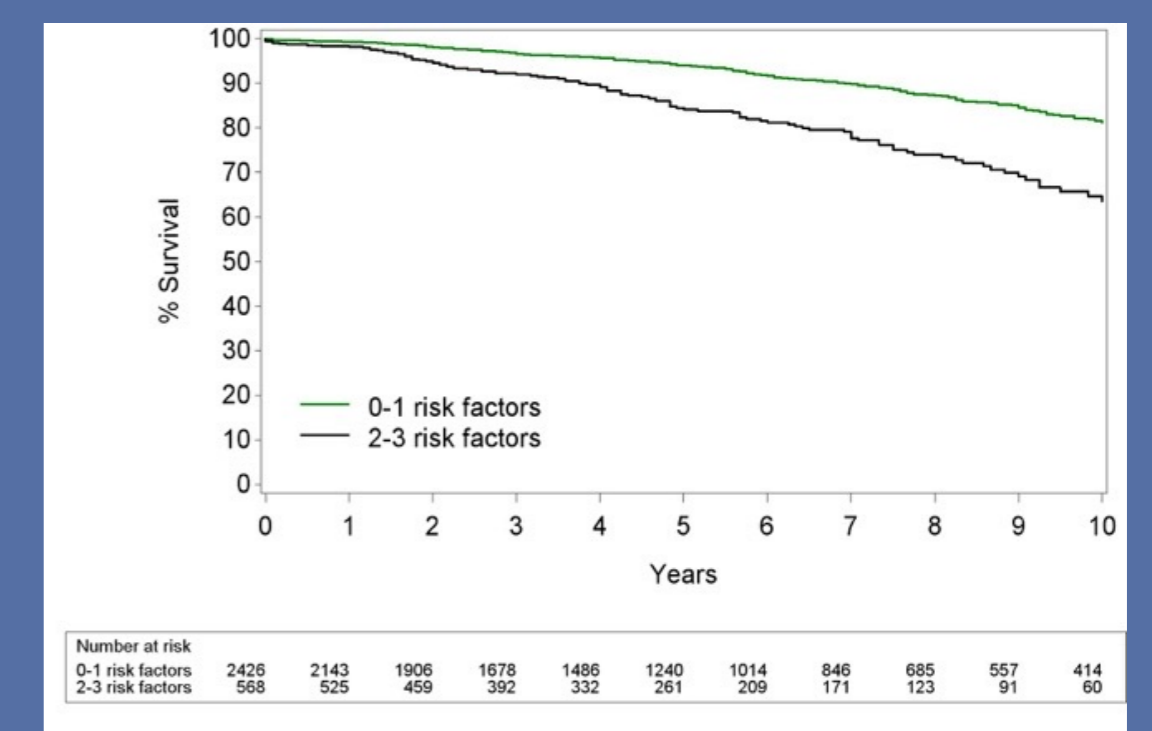
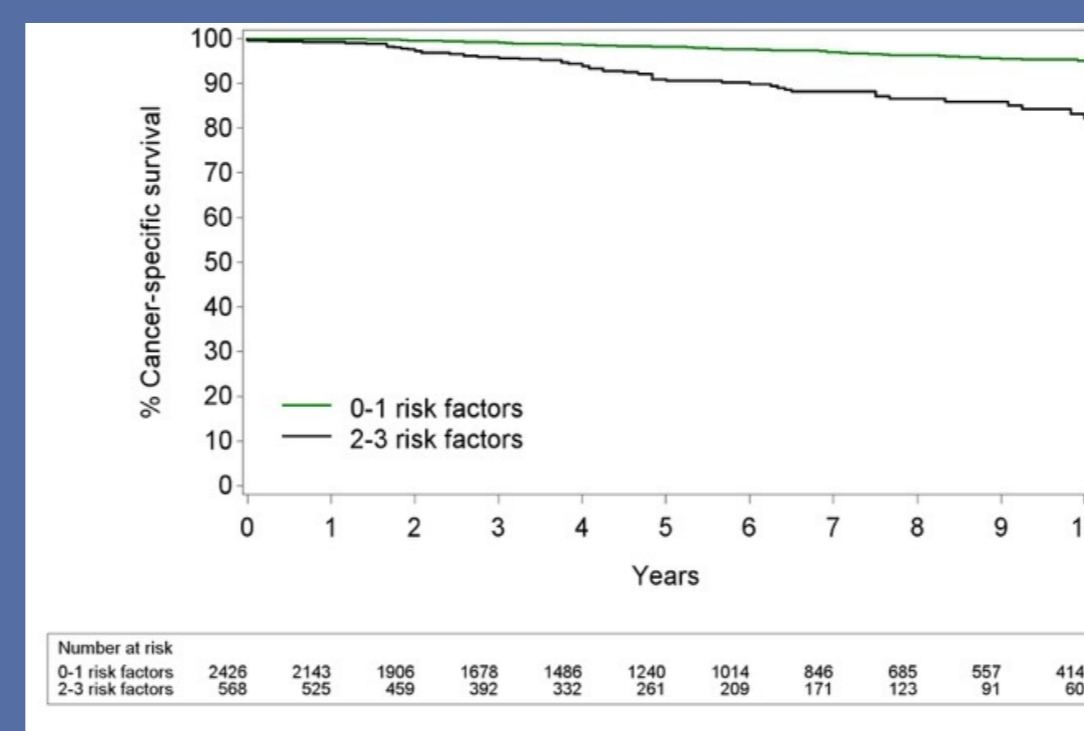
We analysed the cancer-specific survival and overall survival in patients using STAMPEDE high-risk criteria.

Clinical and pathological characteristics	EAU High-risk n=2994	STAMPEDE factors 0-1 (non-high-risk) n=2426	STAMPEDE factors 2-3 (high-risk) n=568
Age (year), median (IQR)	65 (60-70)	65 (60-70)	66 (61-70)
PSA (ng/ml), median (IQR)	13 (7-25)	12 (7-24)	19 (9-50)
PSA >40 ng/ml, n (%)	324 (11)	129 (5)	195 (34)
Clinical stage (cT), n (%)			
cT1	478 (16)	465 (19)	13 (2)
cT2	892 (30)	862 (36)	30 (5)
cT3-4	1624 (54)	1099 (45)	525 (93)
Biopsy Gleason Score (GS), n (%)			
GS 6	984 (33)	954 (39)	30 (5)
GS 7	980 (33)	911 (38)	69 (12)
GS 8-10	1030 (34)	561 (23)	469 (83)
Number of STAMPEDE criteria, n (%)			
0	637 (21)	637 (26)	-
1	1789 (60)	1789 (74)	-
2	515 (17)	-	515 (91)
3	53 (2)	-	53 (9)
Pathological stage (pT), n (%)			
pT2	1178 (39)	1073 (44)	105 (19)
pT3a	1068 (36)	863 (36)	205 (36)
pT3b-4	742 (25)	484 (20)	258 (45)
NA	6 (0)	6 (0)	-
Pathological Gleason Score (GS), n (%)			
GS 6	600 (20)	567 (23)	33 (6)
GS 7	1364 (46)	1229 (51)	135 (24)
GS 8-10	1019 (34)	620 (26)	399 (70)
NA	11 (0)	10 (0)	1 (0)

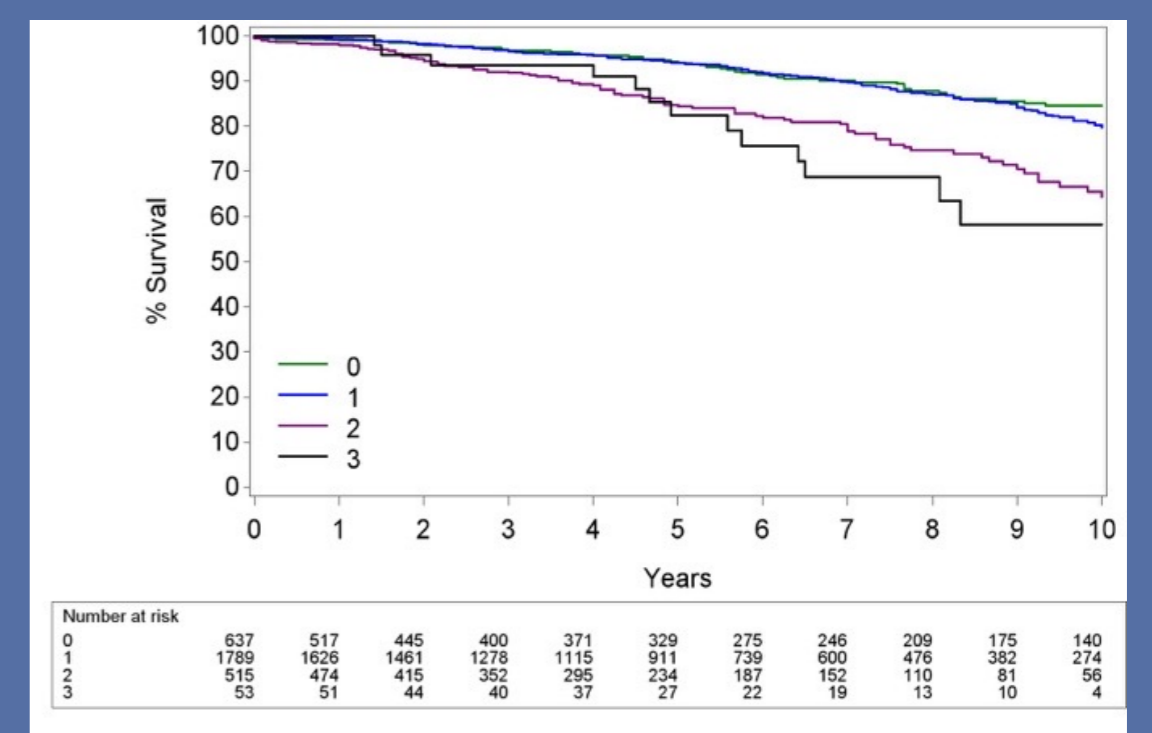
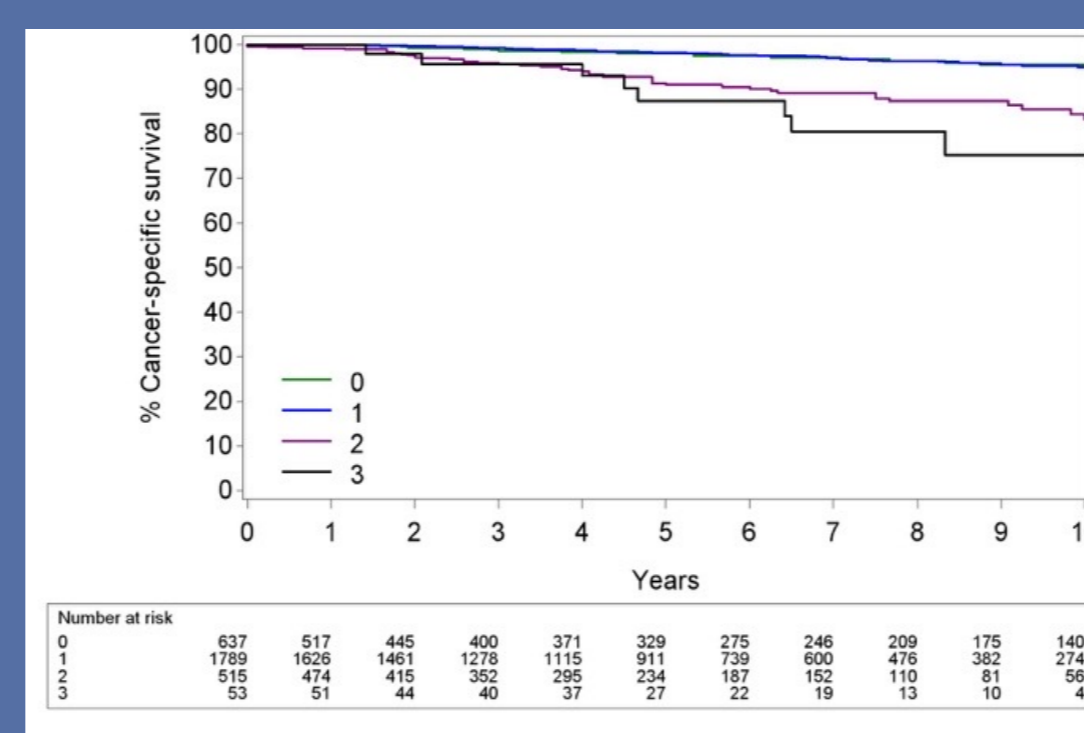
Pathological lymph nodes stage (pN), n (%)	2257 (75)	1947 (80)	310 (55)
pN0	710 (24)	455 (19)	255 (45)
pN1	27 (1)	24 (1)	3 (0)
pNx	-	-	-
Number of nodes removed, median (IQR)	12 (7-19)	11 (7-18)	13 (8-22)
Surgical margins status, n (%)			
Negative	1804 (60)	1535 (63)	269 (47)
Positive	1159 (39)	867 (36)	292 (52)
NA	31 (1)	24 (1)	7 (1)
Adjuvant Radio Therapy, n (%)			
No	2213 (74)	1859 (77)	354 (62)
Yes	441 (15)	305 (13)	136 (24)
NA	340 (11)	262 (10)	78 (14)
Adjuvant Hormonal Therapy, n (%)			
No	2081 (70)	1803 (74)	278 (49)
Yes	605 (20)	390 (16)	215 (38)
NA	308 (10)	233 (10)	75 (13)
Follow-up (months), median (IQR)	60 (28-100)	60 (28-102)	56 (29-89)
Cancer related death, n (%)	124 (4)	71 (3)	53 (9)
Death by any cause	400 (13)	285 (12)	115 (20)
Year of surgery, n (%)			
≤2005	1501 (50)	1230 (51)	271 (48)
>2006	1493 (50)	1196 (49)	297 (52)

## Results

A total of 2994 patients with EAU high-risk PCa were divided into four groups: 0, 1, 2 and 3 STAMPEDE high-risk factors. Estimated 10-year CSS and OS for patients with 0-1 vs. 2-3 STAMPEDE high-risk factors were 95% vs. 82% and 81% vs. 64%, respectively (*both*  $p < 0.0001$ ).



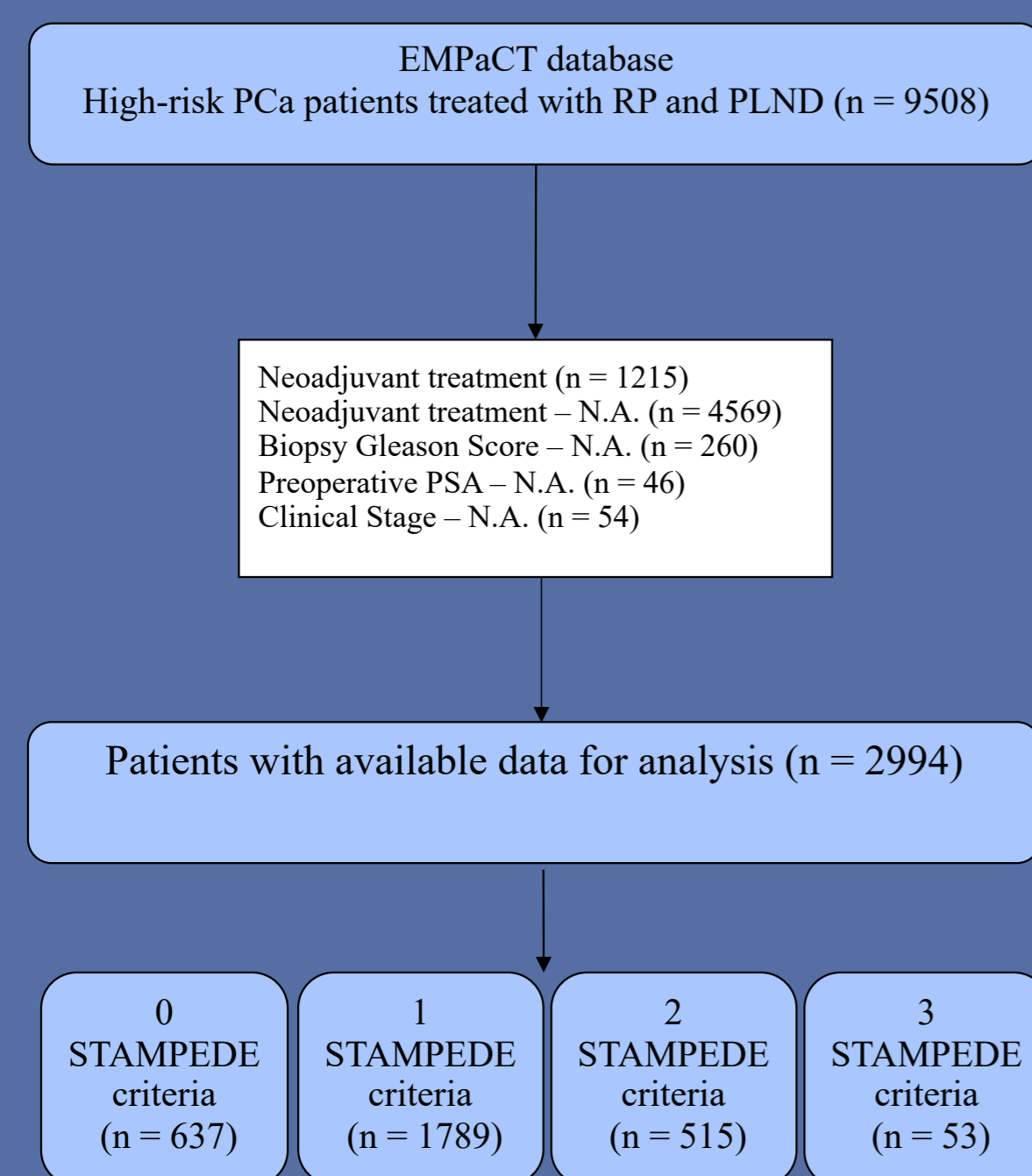
Hazard ratios (HR) for CSS and OS were 1.2 ( $p=0.5$ ), 3.9 ( $p<0.0001$ ), 5.5 ( $p<0.0001$ ) and 1.1 ( $p=0.47$ ), 2.2 ( $p<0.0001$ ), 2.5 ( $p=0.002$ ) for groups with 1, 2 and 3 vs. 0 high-risk factors, respectively.



STAMPEDE risk factors	Cancer Specific Survival			Overall Survival		
	HR	95% CI	p-value	HR	95% CI	p-value
0	Reference	Reference	Reference	Reference	Reference	Reference
1	1.2	0.69-2.07	0.52	1.1	0.84-1.45	0.47
2	3.9	2.18-6.83	<0.0001	2.2	1.65-3.06	<0.0001
3	5.5	2.34-13.00	<0.0001	2.5	1.42-4.36	0.0015

## Statistical Analysis

Cumulative incidence for CSS; Kaplan-Meier for OS. Fine and Gray model for the prognostic effect of STAMPEDE high-risk criteria on CSS. Cox proportional hazards model for the effect of STAMPEDE criteria on OS.



We confirm that the STAMPEDE high-risk criteria identify a subgroup of patients with highly aggressive prostate cancer features and unfavourable long-term oncological outcomes. This population is likely to benefit most of aggressive multimodal treatment. Nevertheless, we demonstrated that surgery remains a viable treatment option for patients with STAMPEDE high-risk prostate cancer.

## Conclusion