

Influence of Hormone Therapy and Testosterone Level on All Cause Survival after Brachytherapy for Localized Prostate Cancer

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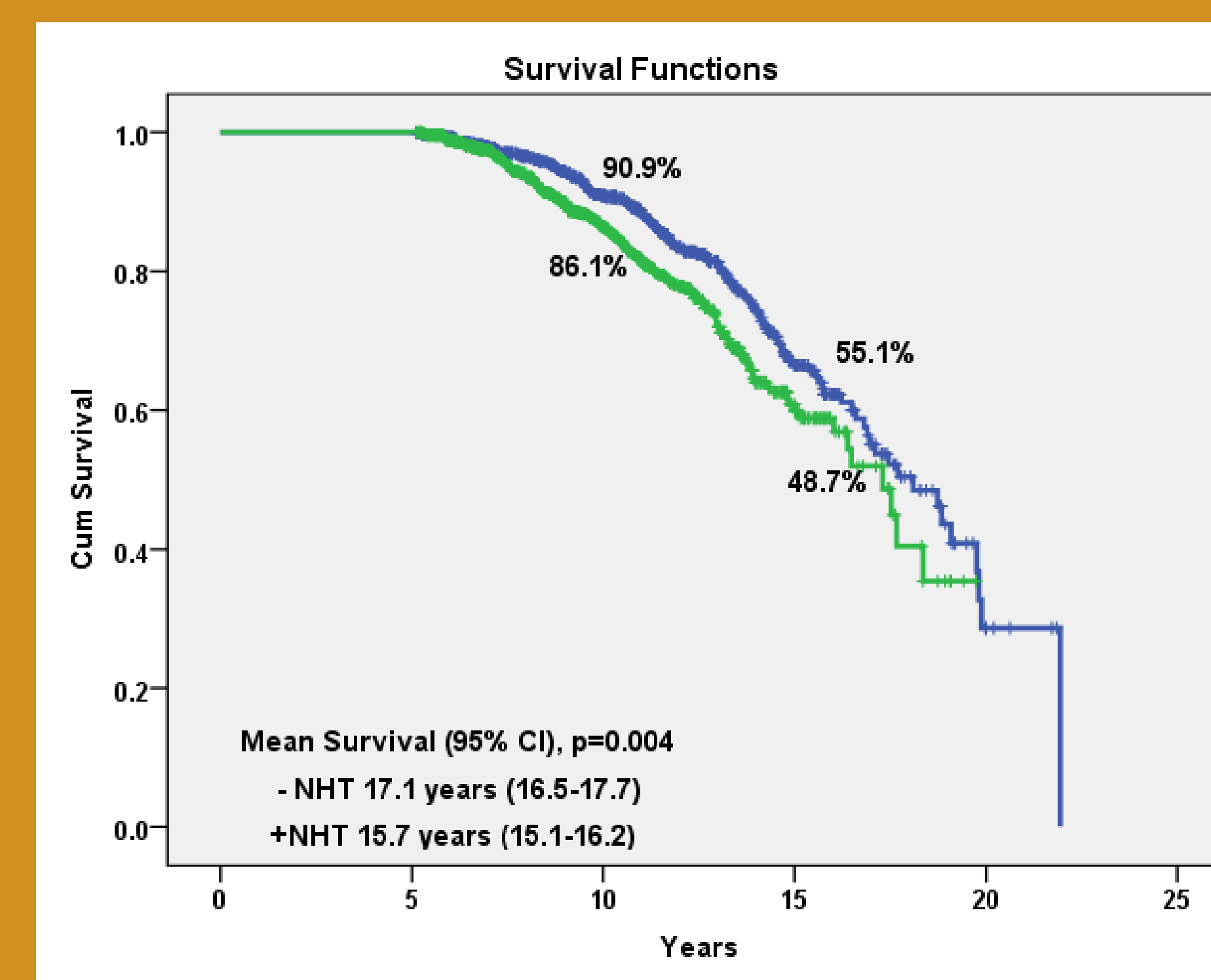
Objective: To determine the influence of neoadjuvant hormone therapy (NHT) and testosterone level (T) on all cause survival (ACS) following prostate seed implantation (PSI).

Materials/Methods

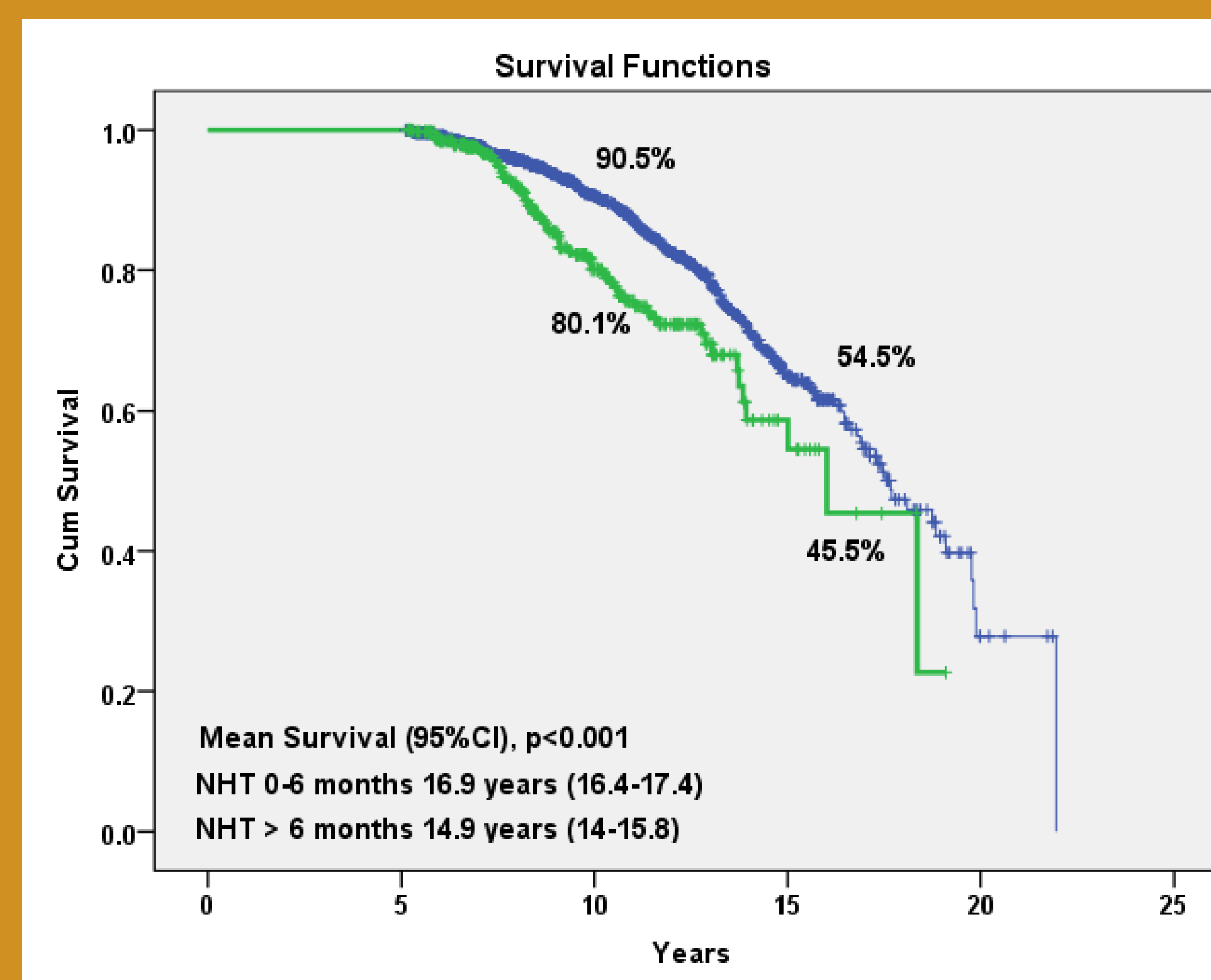
- 1776 men with a median age of 66 years (range 31-84) were followed a minimum of 6 years (mean 10.3, range 6-22.4) and had PSI alone or with neoadjuvant hormone therapy (NHT) and or external beam irradiation boost (EBRT).
- NHT was given to 948 (53.4%) for a median of 6 months (75%ile 3-9). T level was available in 1140 (64.2%) a median of 6.3 years (75% 3.2-9.2) following treatment.
- Information on co-existing medical conditions including diabetes (AODM), coronary artery disease, alcohol use, asthma, atrial fib, other cancers, heart disease, hypertension, stroke and emphysema was determined pre-treatment.
- Associations were compared by two-way tables (Pearson chi-square). Survival was computed by Kaplan-Meier method with comparisons by log rank. Hazard rates (HR) were determined by Cox regression analysis.

RESULTS

All deaths: 317 (17.8%)
Pca Deaths: 41 (2.3%)



Survival in 828 without NHT vs. 948 with NHT; remove Pca deaths at 17 years 56.4% vs. 49%, p=0.013



Survival in 1375 with NHT 0-6 months vs. >6 months

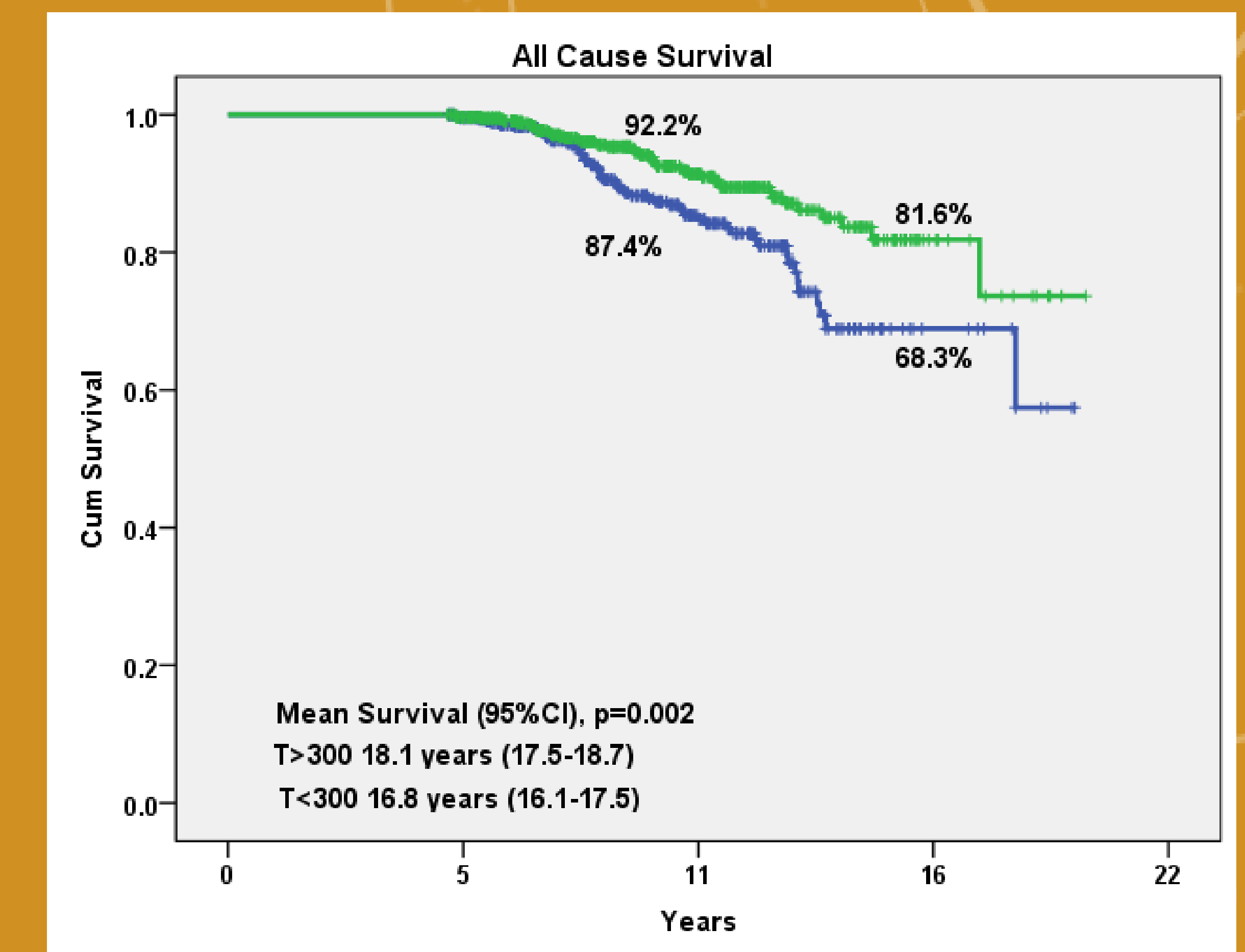
1140 men had a last T level (not on salvage HT) in which 498 (43.7%) had T below 300 ng/dL

125 (11%) had died:
74/498 (14.9%) with T < 300
53/652 (8.3%) with T ≥ 300
OR: 1.93 (95%CI 1.33-2.82)
P < 0.001

NHT 0- 6 months : mean T=342.4 ng/dL
NHT > 6 months: mean T=299.7 ng/dL
P=0.002 (Anova with bootstrap)

Variable	10-year (%)	17-year (%)	Mean survival Years (95%CI)	P value
NHT (months)				
0-6	90.5	54.5	16.9 (16.4-17.4)	
>6	80.1	45.4	14.9 (14.0-15.8)	<0.001
NHT (no salvage HT)				
0-6	90.6	56.7	16.9 (16.3-17.5)	
>6	83.1	44.1	15.1 (14.2-16.1)	0.010
Age (years)				
< 65	94.6	81.3	19.5 (18.8-20.2)	
>65	84.3	36.3	14.8 (14.4-15.3)	<0.001
AODM				
No	89.0	53.9	16.7 (16.2-17.2)	
Yes	82.6	37.1	15.1 (13.4-16.8)	0.018
Last T (no salvage HT)				
<300 ng/dL	87.4	68.3	16.8 (16.1-17.5)	
> 300 ng/dL	92.2	81.6	18.1 (17.5-18.7)	0.002

10- and 17-year all cause survival for NHT age, AODM (diabetes) and last testosterone (T) level.



Improved all cause survival (excluding salvage HT) in men with last T ≥ 300 ng/dL (n=620) vs. T < 300 ng/dL (n=466).

Cox Regression

Variable	Sig.	Hazard Rates	95.0% CI for HR	
			Lower	Upper
NCCN RISK	0.105			
NCCN RISK (1)	0.035	0.427	0.193	0.943
NCCN RISK (2)	0.457	0.836	0.523	1.339
Diabetes	0.177	0.654	0.354	1.211
Age > 65 years	0.000	0.354	0.203	0.617
Last T >300 ng/dL	0.047	1.541	1.005	2.361
NHT	0.393	0.810	0.500	1.313

Conclusions

- NHT > 6 months is associated with lower testosterone
- Lower testosterone is associated with lower ACS
- NHT should be limited to 6 months in men treated with brachytherapy