

Relative Survival of Prostate Cancer Patients in the Canton of Zurich, Switzerland – A Population-Based Study

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Conclusion

We observed an association of age, T-stage and grade with treatment choices as recommended in official guidelines, which say that patients with a life expectation of more than 10 years should be treated. Our results confirm findings from previous studies, stating that prostate cancer patients have a good RS if cancer is diagnosed at an early stage. RS above 100% very likely indicates a selection bias due to PSA screening, which tends to be more often used by men with a health-conscious behavior.

Background

Prostate cancer is the most frequent incident cancer in men in Switzerland.¹ The purpose of this study was to estimate relative survival (RS) of prostate cancer patients who lived in the Canton of Zurich focusing on primary treatment choices, grade, T-stage and age of the patients.

Methods

Relative survival of 1541 prostate cancer patients diagnosed in 2000/01 was estimated according to the Ederer II approach.² Multiple imputation methods³ were applied to missing data on T-stage and grade. Multinomial logistic regression analyses were used to explore the association of T-stage, grade and age with treatment choices.

Results

Mean age at diagnosis was 70.1 years (sd = 9.2, median=70.0). During the follow-up period of 10 years, 833 (54%) of 1541 men died and 27 (1.8 %) were lost to follow-up. The average length of follow-up was 7.70 years (sd = 3.2, median=9.9).

Table 1 presents the association of age, stage and grade with treatment choices. Age was associated with treatment choices indicating that older patients were less likely to undergo surgery. In addition, active surveillance was more likely a treatment choice for older patients and patients with an early stage tumor. Furthermore, higher tumor grade was associated with higher odds of patients undergoing ADT compared to surgery.

In Figure 1, RS stratified by age, T-stage, grade and treatment is illustrated. Overall, 1-, 5- and 10-year RS was 99% [97%-100%], 94% [91%-96%] and 92% [88%-96%], respectively. 1- and 10-year RS of men aged < 80 years was close to 100%, for men aged ≥ 80 years RS decreased (1 year: 91%, 10 years: 52%) (Fig. 1A). When stratified by T-stage (Fig. 1B) or grade (Fig. 1C), RS was highest for men having a T1 and T2 or grade 1 and grade 2 tumor (1 year: 100%, 10 years: > 100%), respectively, compared to grade 3/4 (1 year: 95%, 10 years: 60%) or T4 tumor (1 year: 92%, 10 years: 45%), respectively. RS among patients treated with ADT was considerably lower (1 year: 94%, 10 years: 55%) than for patients who underwent surgical procedures or radiotherapy (1 and 10 years > 100%) (Fig. 1D).

	Radiotherapy vs Surgery			ADT vs Surgery			AS vs Surgery		
	OR	95% CI	p	OR	95% CI	p	OR	95% CI	p
Age									
<60 reference	1			1			1		
60-69	1.23	0.71 - 2.15	0.462	1.70	0.78 - 3.70	0.184	1.02	0.64 - 1.62	0.925
70-79	2.18	1.25 - 3.80	0.006	2.80	1.28 - 6.09	0.010	2.90	1.86 - 4.50	< 0.001
>79	0.21	0.06 - 0.75	0.017	3.92	1.69 - 9.09	< 0.001	3.65	2.21 - 6.02	< 0.001
Stage									
T1 reference	1			1			1		
T2	1.04	0.61 - 1.77	0.878	0.91	0.49 - 1.68	0.753	0.49	0.35 - 0.68	< 0.001
T3	1.42	0.74 - 2.72	0.288	1.72	0.86 - 3.45	0.123	0.60	0.39 - 0.93	0.023
T4	2.19	0.87 - 5.44	0.093	1.45	0.51 - 4.11	0.483	0.57	0.27 - 1.22	0.151
Grade									
1 reference	1			1			1		
2	1.87	1.11 - 3.13	0.018	2.52	1.09 - 5.80	0.030	1.21	0.87 - 1.71	0.258
3/4	1.75	0.95 - 3.22	0.074	6.05	2.57 - 14.23	< 0.001	1.44	0.96 - 2.16	0.077

Table 1: Association of primary treatment with age, stage and grade, Surgery is the reference, Abbreviations: ADT=androgen deprivation therapy, AS=active surveillance

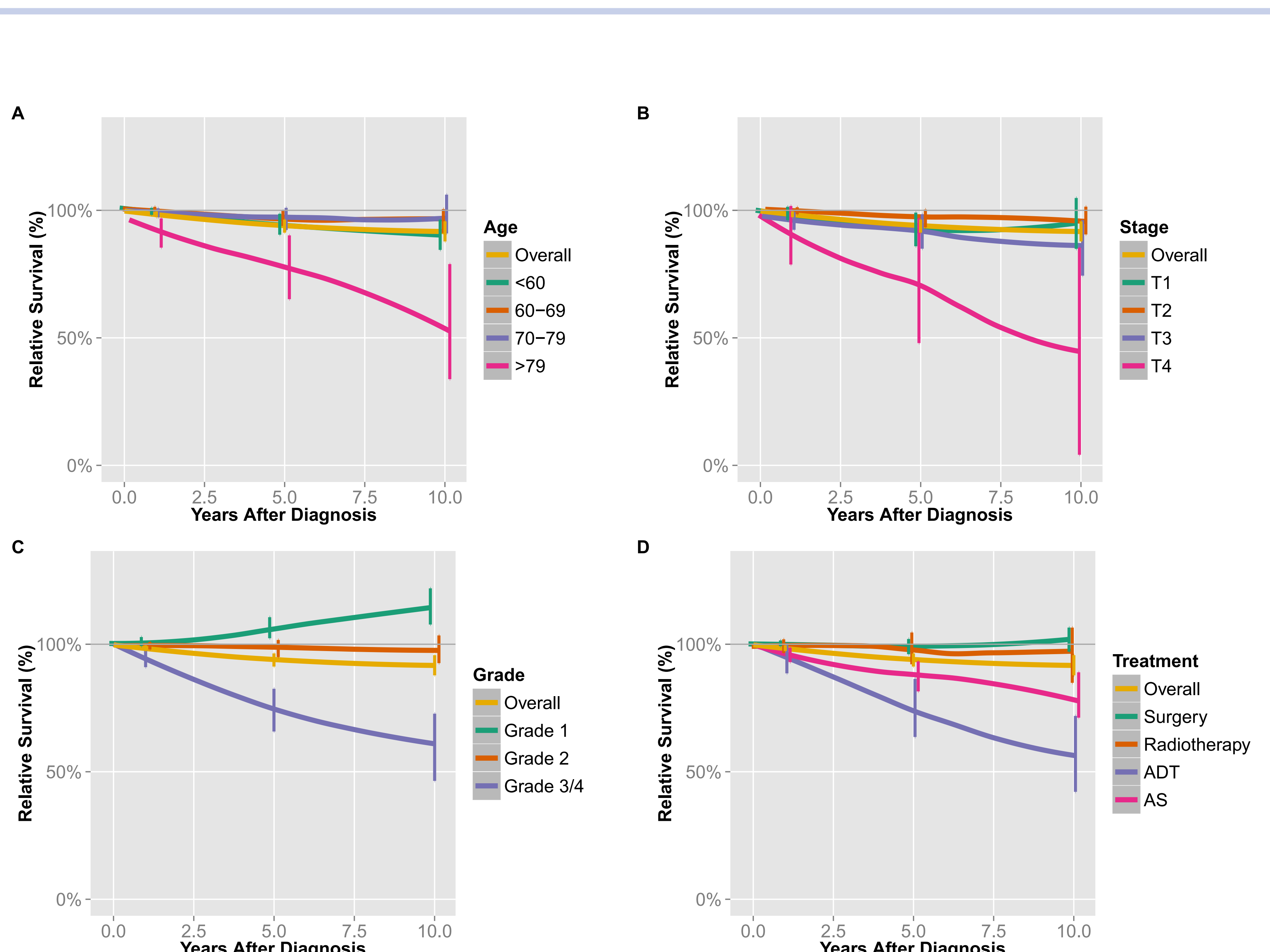


Figure 1: Relative survival estimates and 95 % confidence interval of prostate cancer patients stratified by A: age groups, B: T-stages, C: tumor grade and D: treatment, Abbreviations: ADT=androgen deprivation therapy, AS=active surveillance

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