Supplementary Materials to

Uptake of doublet and triplet therapy for men with de novo metastatic castration sensitive prostate cancer. A population-based study

Standardized survival

We estimated standardized survival curves using a parametric gamma survival model allowing for nonproportional hazards, stratified by the three calendar periods (1). We standardized according to the case mix of men diagnosed in 2022-2024 by adjusting for age, PSA, Gleason score, clinical T stage, and comorbidity using DCI and MDCI. We assessed the fit of the gamma model by comparing the parametric survival curves with the corresponding Kaplan-Meier curves before standardization. Missing data for PSA, T stage, and Gleason score was imputed (5 times) using multiple imputation (2). Confidence intervals were computed by use of bootstrapping (500 resampling) followed by multiple imputation with the boot multiple imputation percentile method (3).

References

1. Jackson CH. flexsurv: A Platform for Parametric Survival Modeling in R. J Stat Softw. 2016 May 12;70.
2. van Buuren S. Flexible Imputation of Missing Data. Chapman and Hall/CRC; 2012. doi:10.1201/b11826.
3. Bartlett JW, Hughes RA. Bootstrap inference for multiple imputation under uncongeniality and misspecification. Stat Methods Med Res. 2020 Dec;29(12):3533–46.

Supplementary Table 1: Availability of registrations of docetaxel administrations from regional health care IT system according to Swedish regions and calendar period. Time periods covered varied between regions since implementation of new IT-systems occurred at different calendar times, the extent of migration to new IT systems varied, and because the regions delivered extracted data from their IT-systems at different calendar times.

Region	Start date	End date
Blekinge	Not covered	Not covered
Dalarna	Not covered	Not covered
Gävleborg	2017-03-09	2023-05-31
Kronoberg	2017-01-03	2023-10-19
Halland	2019-12-12	2023-04-21
Jämtland	2017-12-12	2023-12-13
Jönköping	2010-01-26	2022-12-20
Kalmar	2012-10-18	2021-12-30
Skåne	2001-10-16	2022-11-11
Stockholm	2011-11-29	2024-09-23
Sörmland	2007-05-23	2022-07-27
Uppsala	2009-05-07	2022-01-13
Värmland	2016-04-13	2024-06-28
Västerbotten	2014-03-24	2023-09-15
Västernorrland	Not covered	Not covered
Västmanland	2019-10-21	2022-12-12
Örebro	2016-04-25	2022-11-03
Östergötland	2010-04-29	2021-12-30
Västra Götalandsregionen	2011-01-25	2022-09-23
Gotland	Not covered	Not covered
Norrbotten	2014-01-03	2023-12-31

Supplementary Table 2: Number of men that received upfront docetaxel based on data from NPCR* and/or regional health care IT systems according to calendar period, and coverage of regional health care IT systems.

		Year of diagnosis								
	Register	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
All men with de novo mCSPC		993	982	1029	1053	934	1118	1119	1057	1009
Men that received upfront docexacel	NPCR + Regional health care IT systems	189	267	303	364	250	284	251	218	182
	NPCR	4	178	240	298	205	236	228	206	181
	Regional health care IT systems added to NPCR	185	89	63	66	45	48	23	12	1
	Coverage** by Regional health care IT systems	71%	81%	85%	85%	89%	91%	71%	25%	13%

*Data available in NPCR from March 2017.

**Coverage as a proportion of all men diagnosed with de novo mCSPC the corresponding year. Data had to be available for at least 6 months from date of diagnosis in the region where the man was diagnosed for the man to be considered covered by data from regional health care IT systems.

Abbreviations: National Prostate Cancer Register (NPCR).

Supplementary Table 3: Unadjusted and adjusted overall survival (at 1, 2, and 3 years of follow-up) using Parametric survival for all and the three age groups and annually (see below for details). Estimates are provided with 95% confidence intervals (CI).

		Unadjusted			Adjusted		
All men	**Follow-up**	**2016–2018**	**2019–2021**	**2022–2024**	**2016–2018**	**2019–2021**	**2022–2024**
	1-year	83 (81–84)	86 (85–87)	88 (87–89)	81 (80–82)	85 (84–86)	87 (86–88)
	2-year	64 (63–65)	71 (69–72)	73 (71–74)	64 (63–65)	70 (69–71)	72 (70–74)
	3-year	51 (49–52)	58 (57–60)	61 (58–64)	51 (50–53)	58 (56–59)	60 (58–62)
Below 65 years		**2016–2018**	**2019–2021**	**2022–2024**	**2016–2018**	**2019–2021**	**2022–2024**
	1-year	93 (90–95)	93 (90–95)	96 (94–98)	90 (87–91)	92 (90–94)	95 (93–96)
	2-year	77 (73–81)	79 (75–82)	85 (81–90)	77 (73–79)	81 (78–84)	85 (82–89)
	3-year	62 (57–66)	69 (65–73)	77 (71–84)	65 (61–68)	70 (66–73)	75 (68–81)
65–79 years		**2016–2018**	**2019–2021**	**2022–2024**	**2016–2018**	**2019–2021**	**2022–2024**
	1-year	85 (84–87)	88 (87–89)	91 (90–92)	84 (82–85)	88 (87–89)	90 (89–91)
	2-year	69 (67–71)	76 (75–78)	77 (75–79)	69 (67–70)	75 (74–77)	77 (75–79)
	3-year	56 (54–58)	65 (63–67)	65 (59–70)	56 (54–58)	64 (62–66)	65 (62–68)
Above 80 years		**2016–2018**	**2019–2021**	**2022–2024**	**2016–2018**	**2019–2021**	**2022–2024**
	1-year	70 (67–72)	75 (72–78)	79 (76–82)	72 (70–75)	75 (73–77)	77 (75–80)
	2-year	49 (46–52)	54 (51–57)	57 (53–61)	52 (49–54)	54 (53–58)	58 (55–61)
	3-year	36 (33–39)	40 (37–43)	46 (40–52)	37 (35–40)	41 (39–44)	44 (40-48)

Abbreviations: Overall survival (OS).

Supplementary Figure 1. Standardized 3-year overall survival for men with de novo metastatic castration-sensitive prostate cancer diagnosed in 2016-2024.