

Adjuvant chemotherapy in small node-negative triple-negative breast cancer (TNBC)

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Background

- Patients with triple negative breast cancer (TNBC) have high rate of disease recurrence and often receive neoadjuvant or adjuvant chemotherapy.¹⁻⁵
- International guidelines differ in their recommendation for adjuvant chemotherapy in T1N0 TNBC.⁶⁻⁹
- We evaluated the use of chemotherapy and associations of chemotherapy with long-term outcome in a large population-based pT1N0 TNBC cohort.**

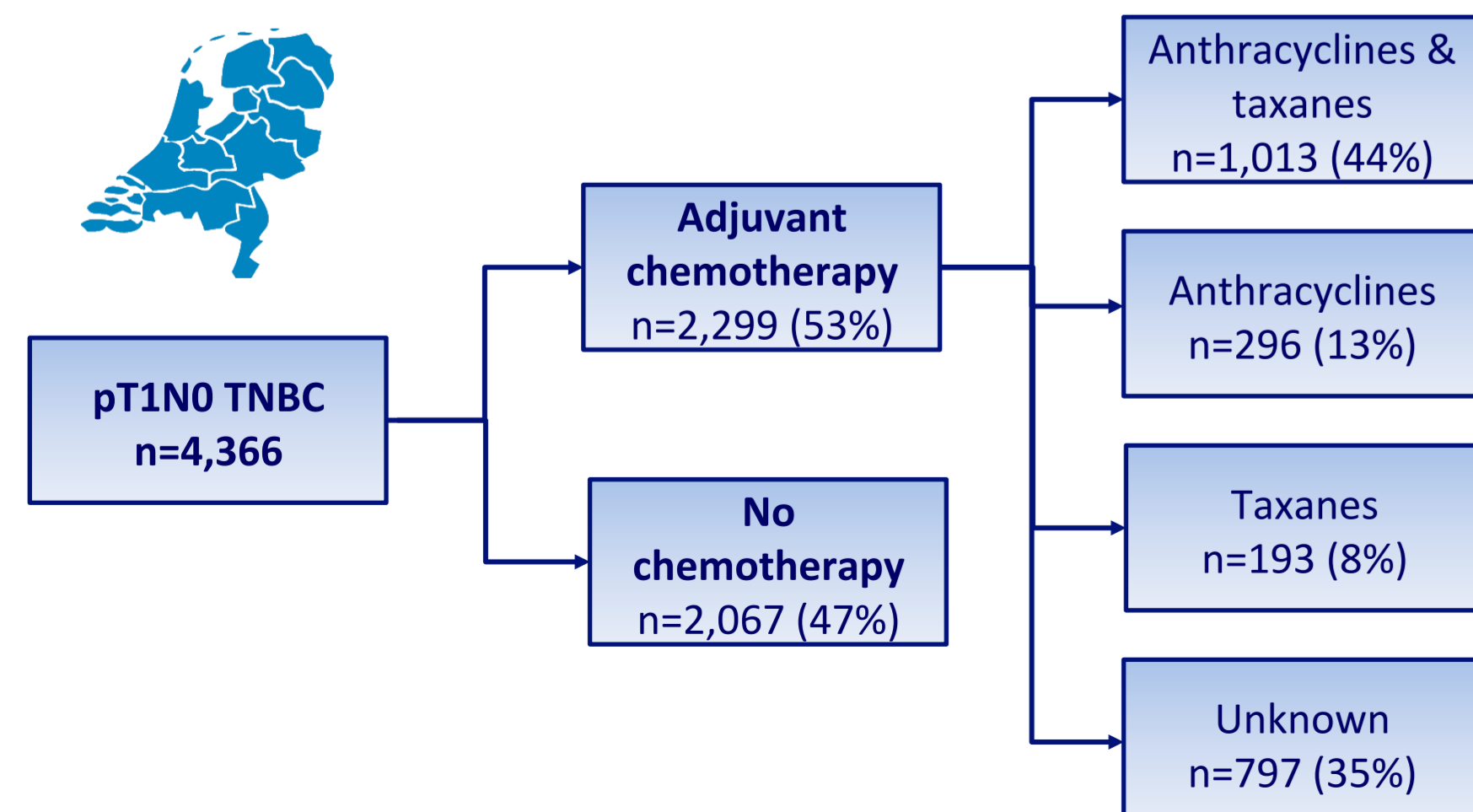
References

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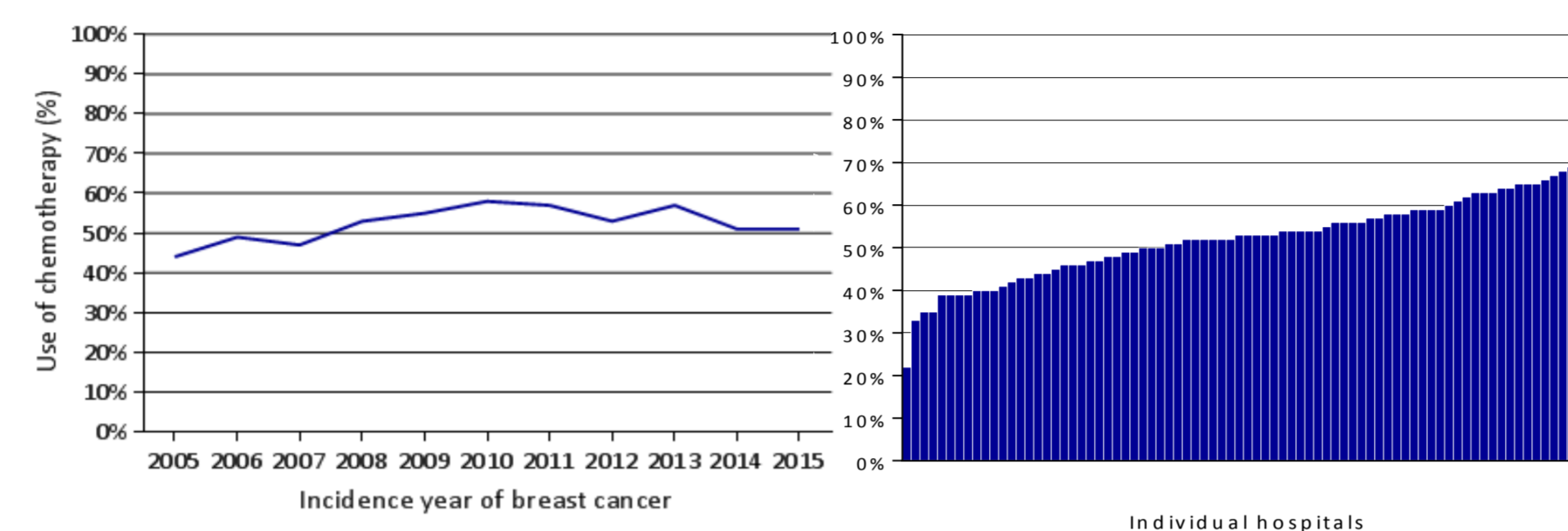
Methods

- All patients diagnosed with pT1N0M0 TNBC between January 2005 and December 2015 were identified from the Netherlands Cancer Registry (NCR).
- Patient, tumor, and therapy characteristics were extracted from the NCR. Date and cause of death were obtained from Statistics Netherlands.
- We used multivariable Cox regression models to evaluate associations of chemotherapy with overall survival (OS) and breast-cancer specific survival (BCSS), adjusted for baseline characteristics.
- Subgroup analyses were performed by tumor size and grade.

Results



Chemotherapy use in TNBC pT1N0 remains stable over time but varies between hospitals



Patient, tumor, and treatment characteristics

	Chemotherapy (n=2,299)		No chemotherapy (n=2,067)		P-value
	n	%	n	%	
Age					<0.001
≤60 years	1,775	77%	769	37%	
>60 years	524	23%	1,298	63%	
Tumor stage					<0.001
pT1a/pT1b	171	7%	1,034	50%	
pT1c	2,127	93%	1,031	50%	
Pathologic nodal stage					0.070
Negative	2,217	96%	2,013	97%	
ITC	82	4%	54	3%	
Grade					<0.001
1 or 2	240	10%	931	45%	
3	2,018	88%	1,034	50%	
Unknown	41	2%	102	5%	
Local therapy of breast					0.060
BCS + RT	1,773	76%	1,532	74%	
BCS - RT	27	1%	33	2%	
Mastectomy + RT	16	1%	13	1%	
Mastectomy - RT	513	22%	524	25%	
Axillary node dissection					0.046
Yes	111	5%	129	6%	
No	2,188	95%	1,938	94%	
Endocrine therapy					0.079
Yes	27†	1%	13†	1%	
No†	2,272	99%	2,054	99%	

ITC, isolated tumor cells; BCS, breast-conserving surgery; RT, radiotherapy.

* Percentages for chemotherapy are based on number of patients treated with chemotherapy

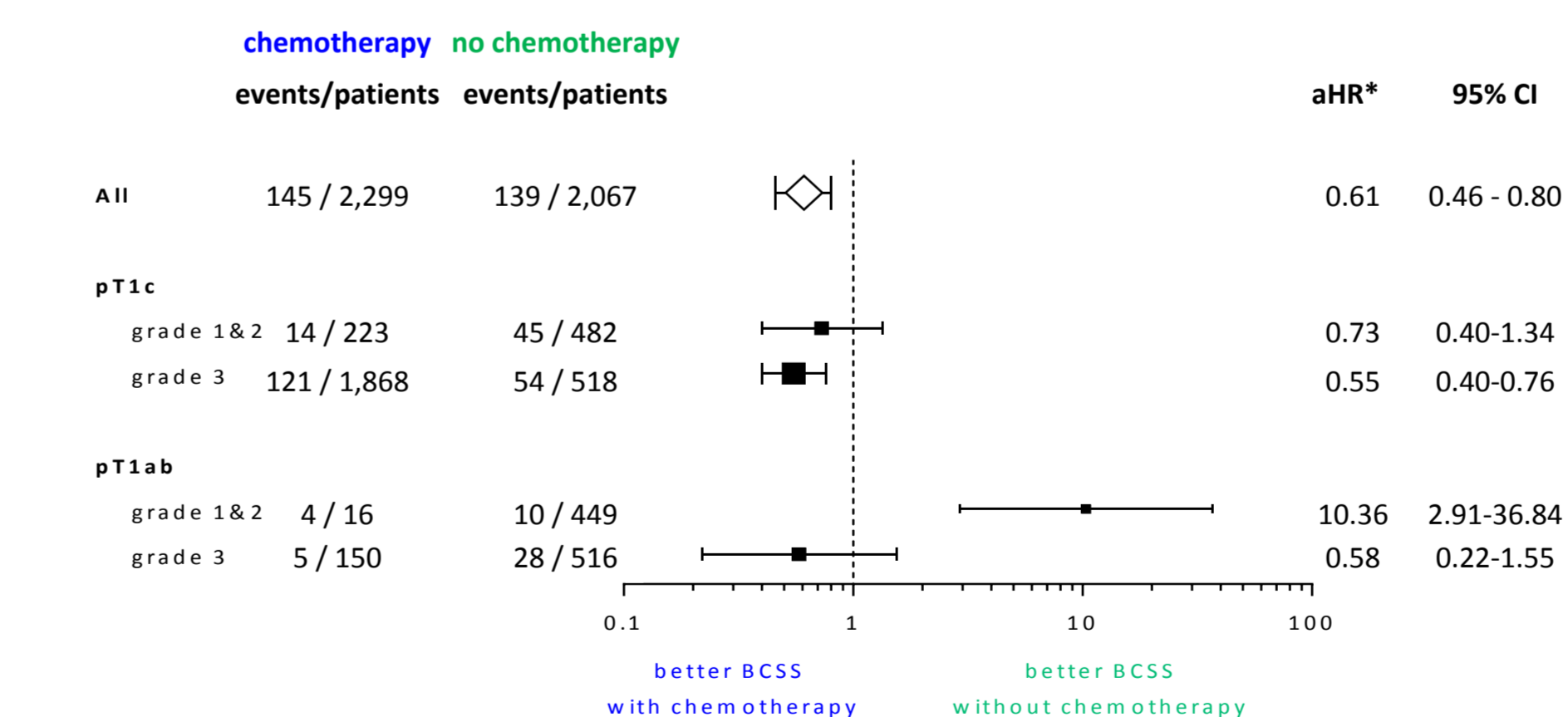
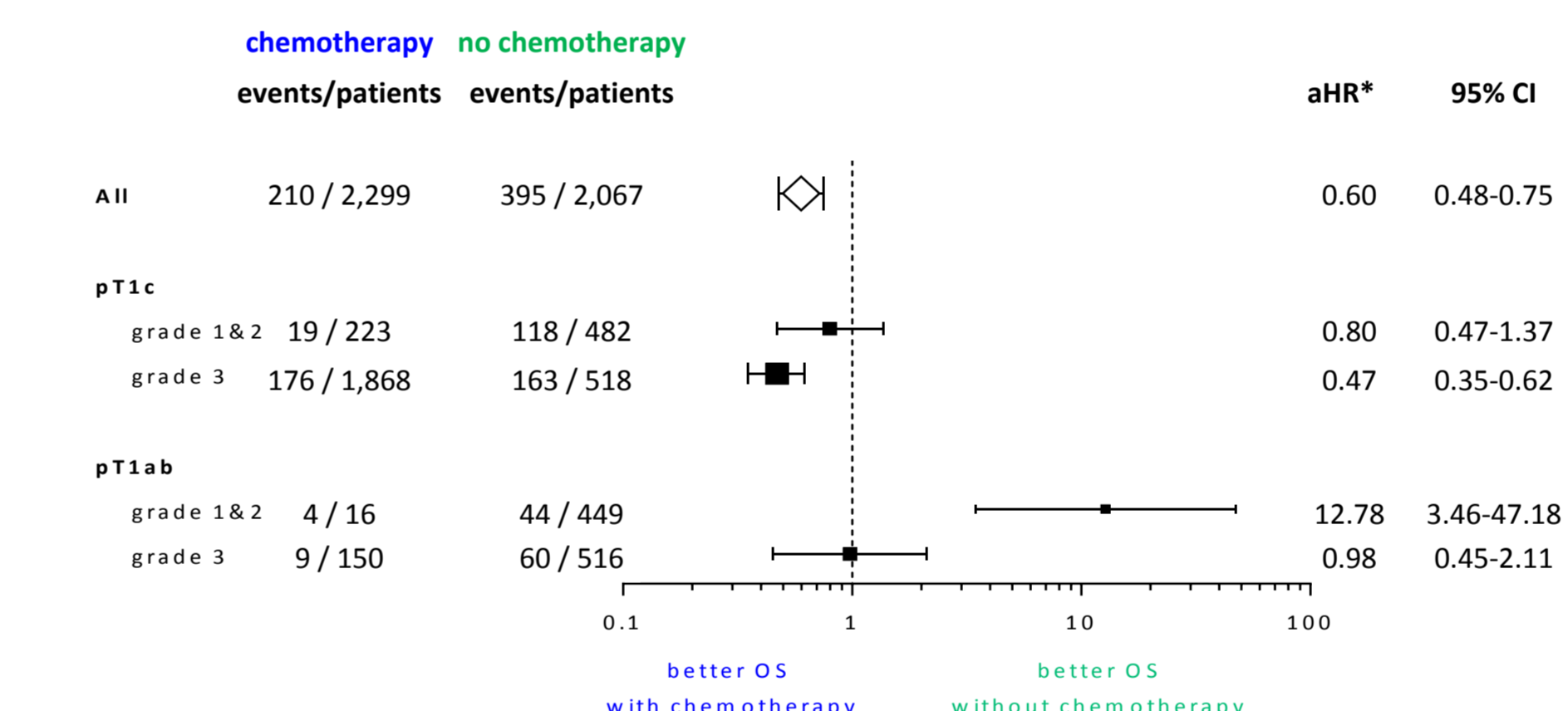
† 5 patients underwent ovariectomy

‡ 14 in the chemotherapy group.

|| P-values are based on Fisher's exact test, χ^2 test, or Student's T-test

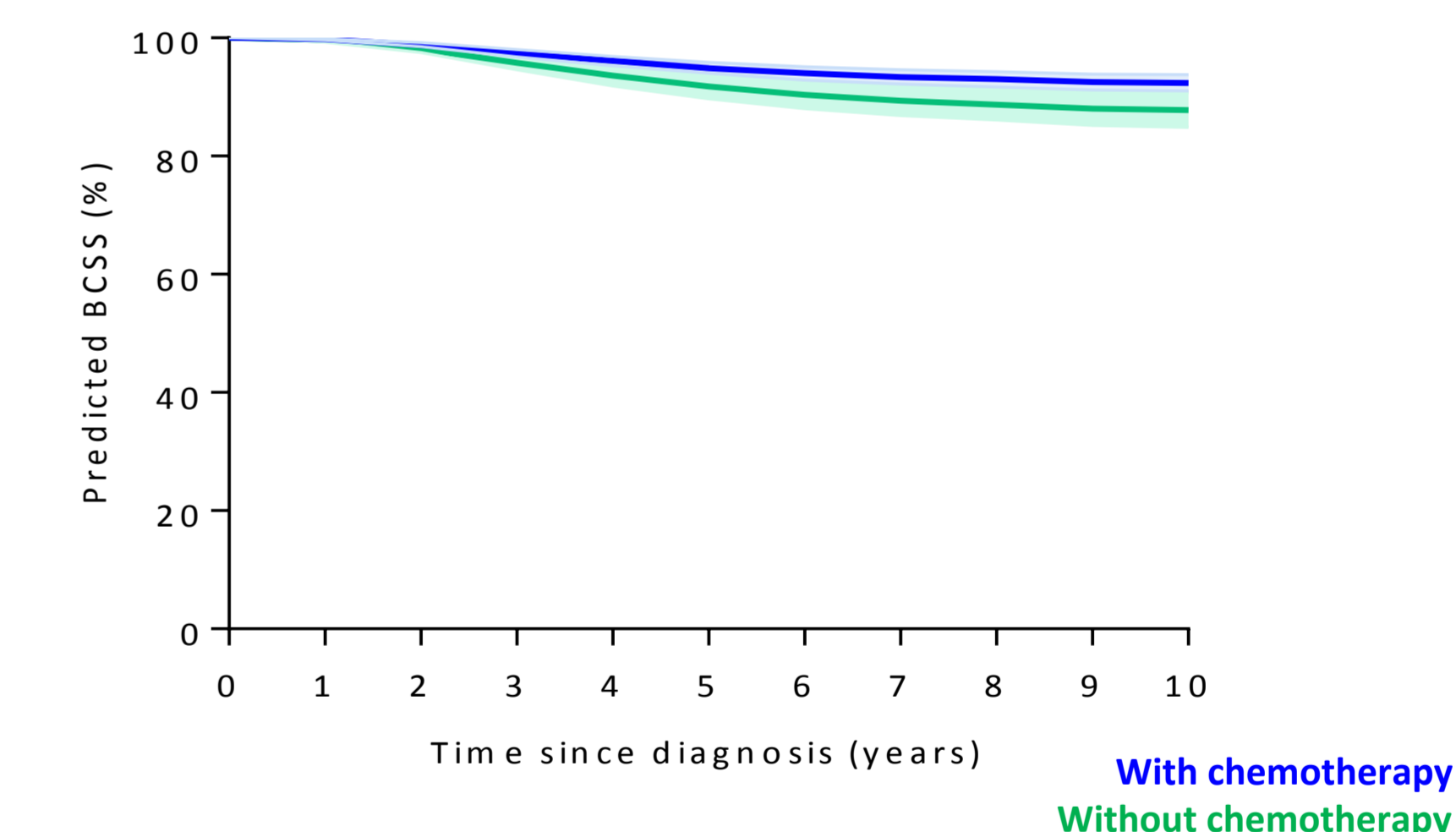
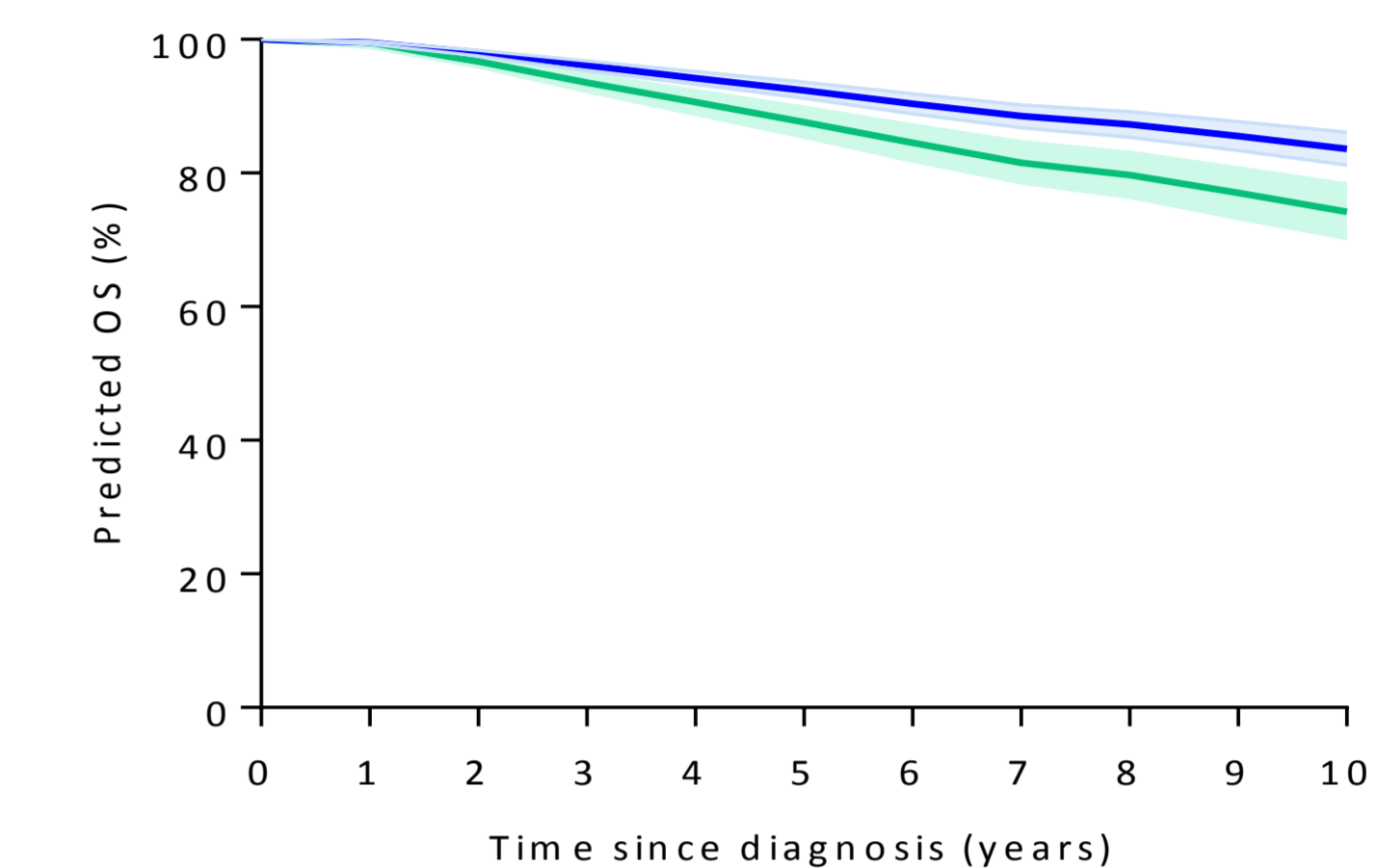
Associations chemotherapy with OS and BCSS in all patients and according to tumor size and grade

- The median follow-up was 7.3 years (IQR 4.9-10.0 years).
- A total of 605 patients had died, of them 284 died due to breast cancer.
- Adjuvant chemotherapy is associated with better OS (aHR 0.60, 95% CI 0.48-0.75) and BCSS (aHR 0.61, 95% CI 0.46-0.80) in all patients.**
- P-value for interaction for chemotherapy by size was 0.013 and for chemotherapy by grade 0.121, both tested in multivariable OS model.
- P-value for interaction for chemotherapy by size was 0.055 and for chemotherapy by grade 0.038, both tested in multivariable BCSS model.



* aHR, adjusted hazard ratio; adjusted for age, grade, tumor size, local therapy of primary tumor and presence of isolated tumor cells in the lymph nodes based on p-value <0.05 in univariable analyses or clinical relevance.

Predicted OS and BCSS for a hypothetical case of a 60-year old woman with a grade 3 pT1c tumor, no ITC treated with



Conclusion

Adjuvant chemotherapy is associated with higher OS and BCSS in small node-negative TNBC. The benefit is most evident in grade 3 tumors >1 cm. Despite small numbers, chemotherapy in patients with pT1a,b or grade 1/2 tumors seems harmful. Results may be subject to confounding by indication.

