

# Use of Chemotherapy and Loco-regional Therapy in Stage IA triple-negative Breast Cancer and their Association with Oncologic Outcomes: A Cancer Registry Study

André Pfob, MD<sup>1,2</sup>; Irina Surovtsova, PhD<sup>3</sup>; Daria B. Kokh, PhD<sup>3</sup>; Joerg Heil, MD<sup>1,4</sup>; Maggie Banys-Paluchowski, MD<sup>5</sup>; Philipp Morakis, MD<sup>6</sup>

<sup>1</sup> Department of Obstetrics and Gynecology, Heidelberg University Hospital, Heidelberg, Germany  
<sup>2</sup> National Center for Tumor Diseases (NCT) and German Cancer Research Center (DKFZ), Heidelberg, Germany  
<sup>3</sup> Clinical State Registry Baden-Württemberg GmbH, Baden-Württemberg Cancer Registry (BWCR), Stuttgart, Germany  
<sup>4</sup> Breast Centre Heidelberg, Klinik St. Elisabeth, Heidelberg, Germany  
<sup>5</sup> Department of Gynecology and Obstetrics, University Hospital Schleswig-Holstein, Campus Lübeck, Lübeck, Germany  
<sup>6</sup> Quality Conferences Office at the Clinical State Registry Baden-Württemberg GmbH, Baden-Württemberg Cancer Registry (BWCR), Stuttgart, Germany

## Background

- There is scarce evidence regarding the use of adjuvant chemotherapy for Stage IA triple negative breast cancer, resulting in inconclusive guideline recommendations.
- We aimed to evaluate the role of adjuvant chemotherapy and loco-regional therapy for stage IA (pT1, pN0) triple-negative breast cancer (TNBC) in a real-world setting.

## Methods

- We identified patients with pT1, pN0 TNBC diagnosed between 2009 and 2021 within the Baden-Württemberg cancer registry (BWCR), Germany
- Overall survival (OS) was assessed using Kaplan-Meier statistics and multivariate Cox regression models (adjusted for age, use of chemotherapy, local therapy (breast conserving therapy [breast conserving surgery + radiotherapy] vs. mastectomy), and tumor histologic subtype).

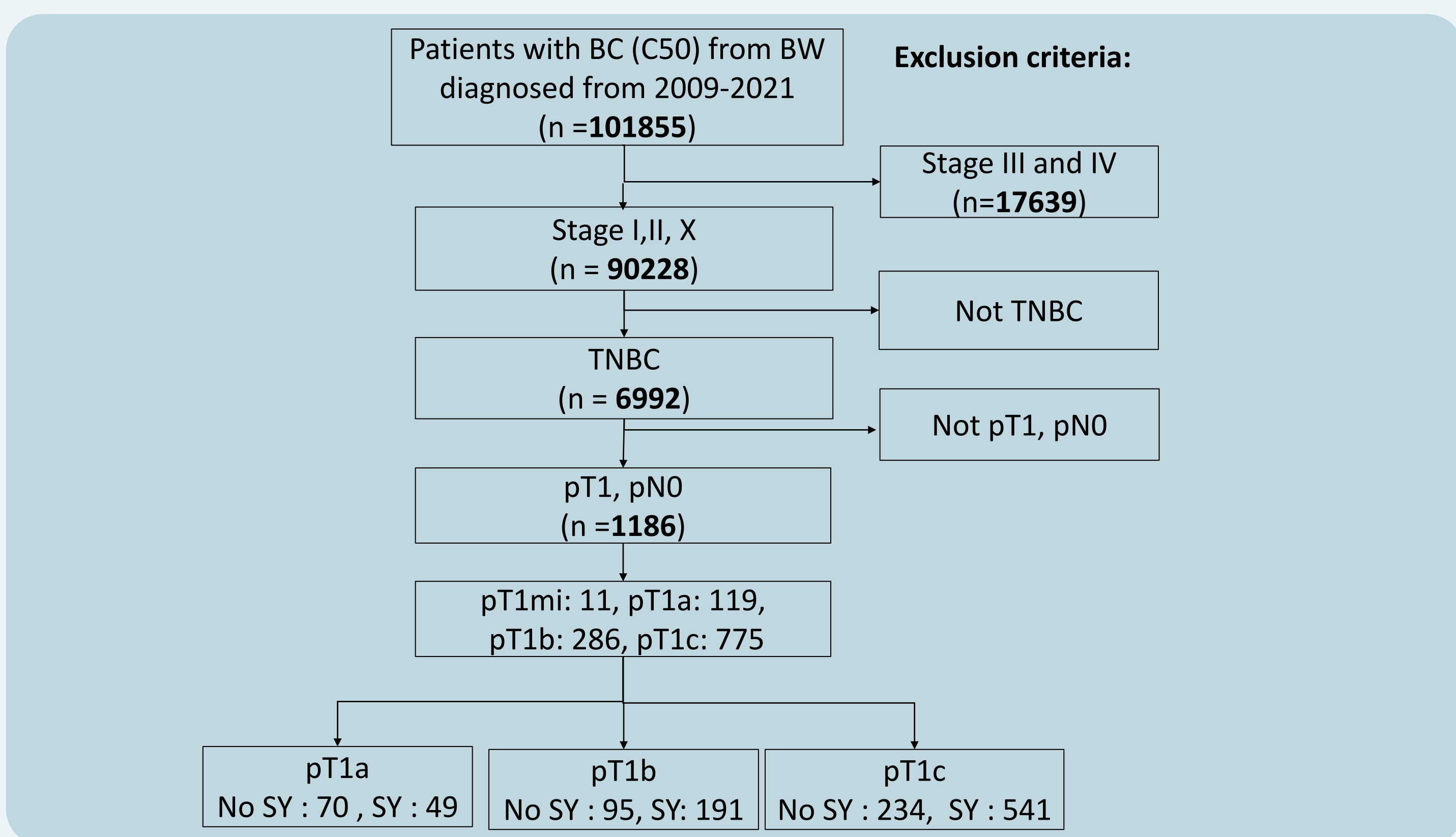


Fig. 1: Flow Chart

	Overall	pT1a	pT1b	pT1c	pT1mi	p-value
	1191 (100)	119 (10.0)	286 (24.0)	775 (65.1)	11 (0.9)	
<b>Chemotherapy — no. (%)</b>						<0.001
No	409 (34.3)	70 (58.8)	95 (33.2)	234 (30.2)	10 (90.9)	
Yes	782 (65.7)	49 (41.2)	191 (66.8)	541 (69.8)	1 (9.1)	
<b>Age — mean (SD)</b>	60.4 (12.7)	60.9 (10.5)	58.6 (12.3)	61.0 (13.2)	61.0 (10.1)	0.059
<b>Age group — no. (%)</b>						0.001
<70 years	893 (75.0)	89 (74.8)	239 (83.6)	556 (71.7)	9 (81.8)	
≥70 years	298 (25.0)	30 (25.2)	47 (16.4)	219 (28.3)	2 (18.2)	
<b>Histologic subtype — no. (%)</b>						0.421
NST	999 (83.9)	100 (84.0)	235 (82.2)	653 (84.3)	11 (100.0)	
other	192 (16.1)	19 (16.0)	51 (17.8)	122 (15.7)	0 (0.0)	
<b>Grading — no. (%)</b>						<0.001
1	51 (4.3)	11 (9.4)	12 (4.2)	27 (3.5)	1 (10.0)	
2	359 (30.5)	55 (47.0)	105 (36.7)	194 (25.4)	5 (50.0)	
3	767 (65.2)	51 (43.6)	169 (59.1)	543 (71.1)	4 (40.0)	
<b>cT — no. (%)</b>						<0.001
cT0	15 (3.6)	6 (16.7)	4 (4.3)	3 (1.1)	2 (33.3)	
cT1	114 (27.6)	8 (22.2)	26 (27.7)	76 (27.4)	4 (66.7)	
cT1a	19 (4.6)	13 (36.1)	4 (4.3)	2 (0.7)	0 (0.0)	
cT1b	78 (18.9)	2 (5.6)	44 (46.8)	32 (11.6)	0 (0.0)	
cT1c	135 (32.7)	1 (2.8)	9 (9.6)	125 (45.1)	0 (0.0)	
cT2	52 (12.6)	6 (16.7)	7 (7.4)	39 (14.1)	0 (0.0)	
unknown	778	83	192	498	5	
<b>Therapy group (%)</b>						0.285
mastectomy only	92 (8.3)	5 (4.7)	31 (11.4)	55 (7.6)	1 (9.1)	
BET + radiotherapy	802 (71.9)	84 (78.5)	186 (68.6)	525 (72.3)	7 (63.6)	
others	221 (19.8)	18 (16.8)	54 (19.9)	146 (20.1)	3 (27.3)	

Tab 1: Baseline clinical and patient characteristics

## Results

- A total of 1191 patients with a median follow-up of 43.8 months were identified

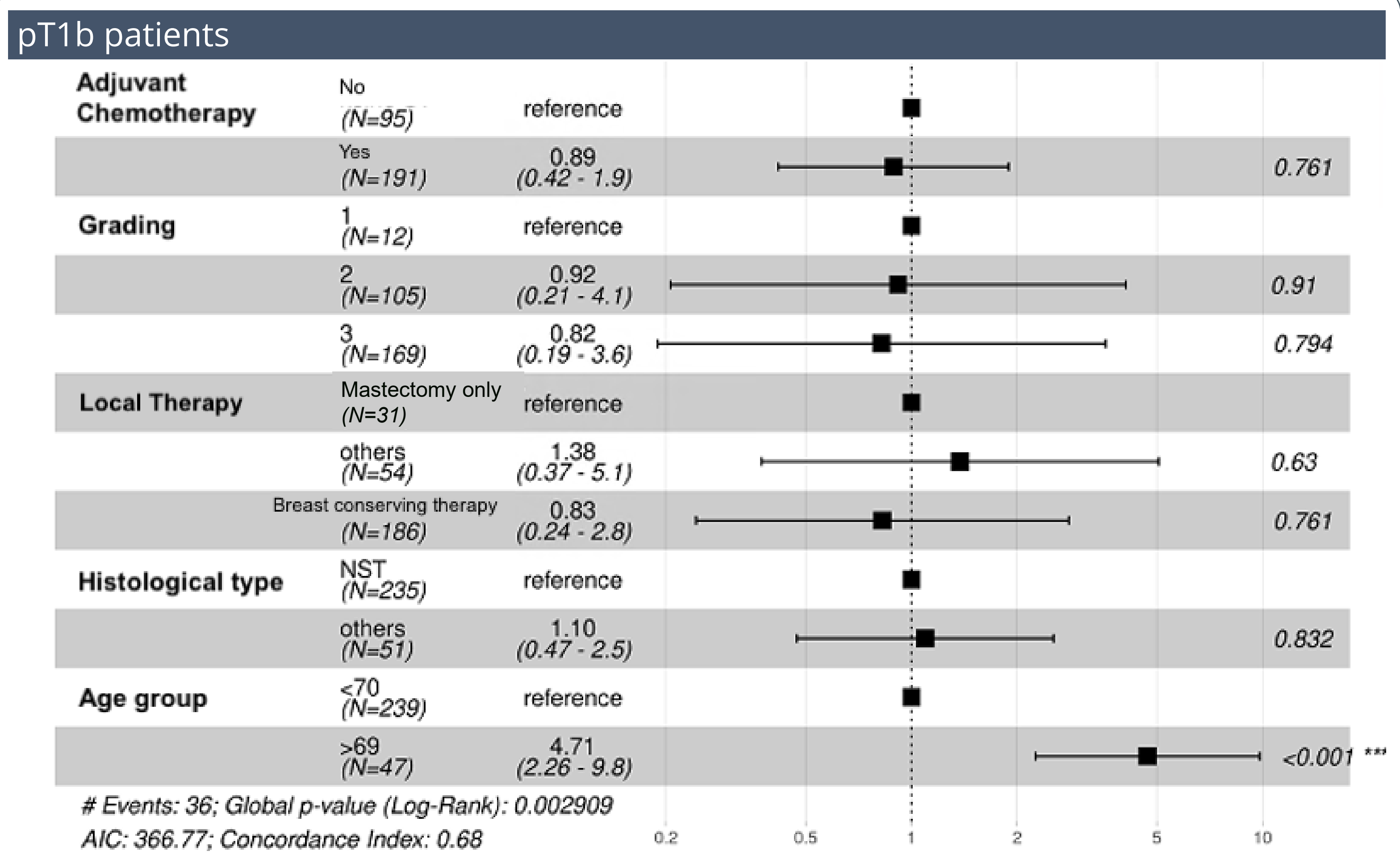


Fig. 2: Multivariate Cox Regression Analysis for overall survival in TNBC breast cancer

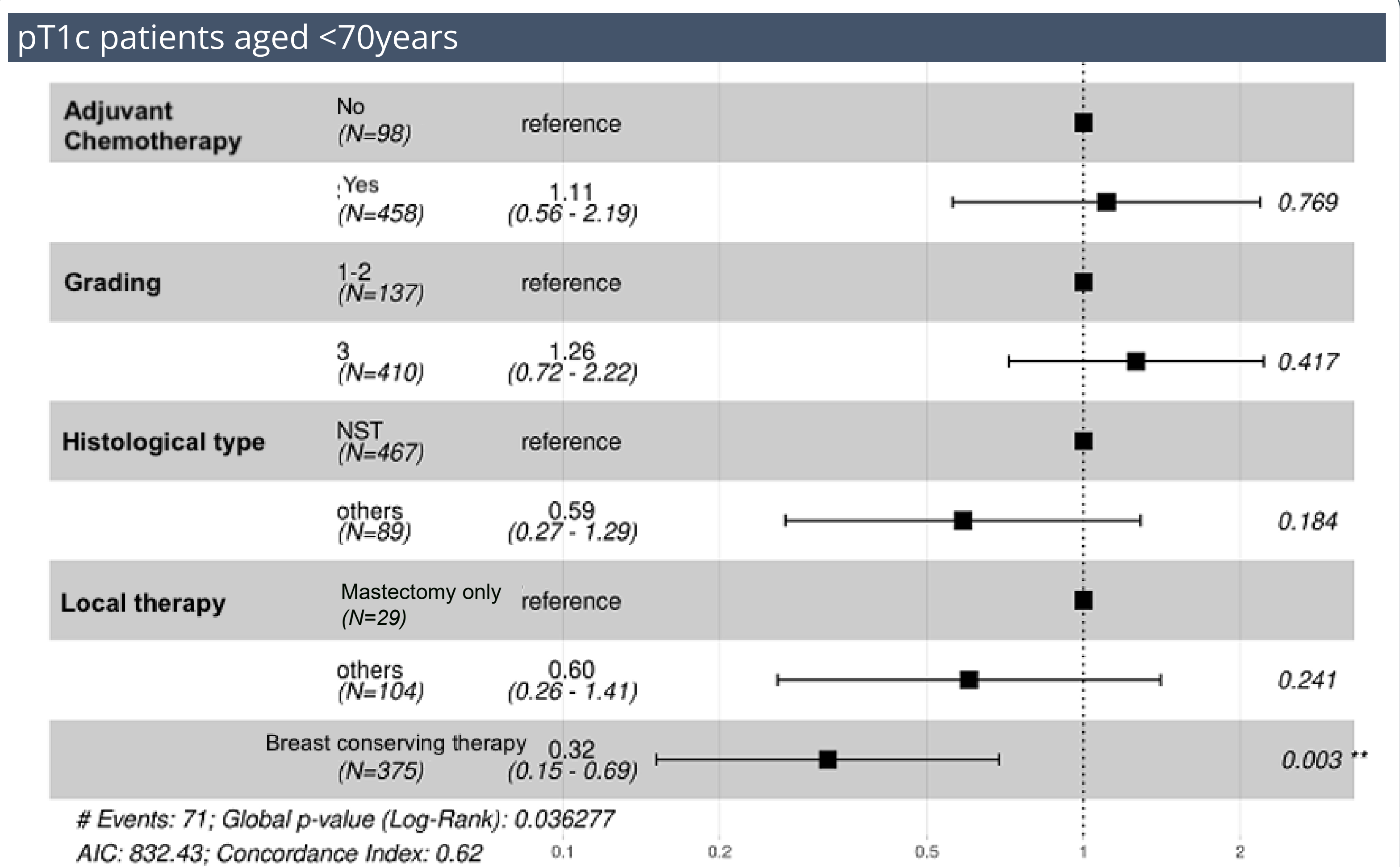


Fig. 3: Multivariate Cox Regression Analysis for overall survival in TNBC breast cancer

- Multivariate Cox regression analysis revealed no significant influence for the use of chemotherapy on OS in pT1b patients (HR 0.89, 95% CI 0.42-1.90)
- For pT1c patients, the use of chemotherapy was significantly associated with improved OS (HR 0.55, 95% CI 0.38-0.81), as was breast conserving therapy (HR 0.41, 95% CI 0.25-0.69), and patient age (HR 2.33, 95% CI 1.61-3.39, for age ≥70years).
- For pT1c patients aged <70years, only breast conserving therapy (HR 0.32, 95% CI 0.15-0.69) but not use of chemotherapy (HR 1.11, 95% CI 0.56-2.19) remained associated with OS.

## Conclusion

- This data suggests that OS in stage IA TNBC is strongly influenced by local therapy and patient age, rather than the use of chemotherapy.
- Larger studies with longer-term follow-up are welcomed to fully inform this discussion.
- In the absence of RCTs, real-world evidence from cancer registries may provide guidance for clinically-relevant questions.