

Comparing Primary Surgery and Neoadjuvant Chemotherapy for advanced Ovarian, Tubal, and Peritoneal Carcinoma: Insights from Real-World Data

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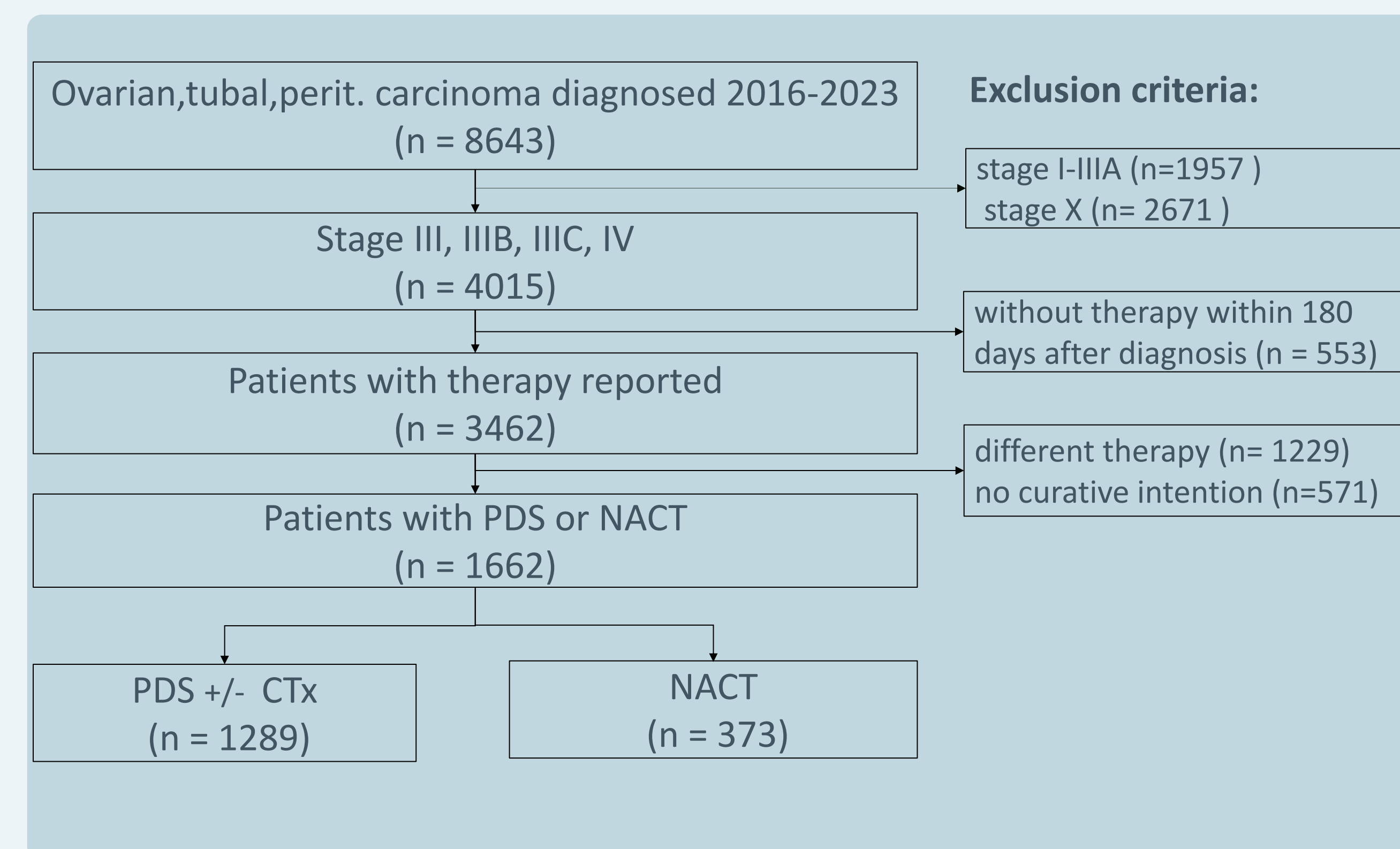
Background

- Primary debulking surgery (PDS) followed by chemotherapy is the standard for advanced ovarian cancer, yet the effectiveness of neoadjuvant chemotherapy (NACT) followed by interval debulking surgery (IDS) remains uncertain.
- Although two trials (EORTC-GCG, CHORUS) reported non-inferior outcomes for NACT+IDS, the patient subgroups most likely to benefit from NACT are still undefined.
- The recent TRUST trial showed significant PFS benefit for PDS with the largest effect in patients aged <65years and with stage III; no OS benefit was observed.
- This study compare the oncologic outcomes of NACT versus PDS for advanced ovarian, tubal, and peritoneal carcinoma using real-world data from the Baden-Württemberg Cancer Registry (BWCR), Germany.

Methods

- We analyzed data from the BWCR on patients diagnosed between 2016 and 2023 with FIGO stage IIIB-IV ovarian, tubal, and peritoneal carcinoma who underwent curative-intent PDS or NACT with paclitaxel-carboplatin (+/- bevacizumab).
- Baseline and treatment characteristics were compared using Fisher's exact test or the chi-square test, as appropriate.
- The primary endpoint was overall survival (OS), assessed using Kaplan-Meier and multivariable Cox models.
- Secondary endpoints included surgical outcomes (macroscopic complete resection (CR) vs. residual disease) and 90-day postoperative mortality.

Fig. 1: Consort Diagram



Conflict of interest : No conflict of interest

Results

Table 1: Patient characteristics

	Overall	NACT	PDS	P - value
Total – no. (%)	1662	373 (22.4)	1289 (77.6)	
Age – mean (SD)	64.4 (11.3)	65.3 (10.1)	64.1 (11.6)	0.06
stage – no. (%)				0.056
■ III	1074 (64.6)	225 (60.3)	849 (65.9)	
■ IV	588 (35.4)	148 (39.7)	440 (34.1)	
grade – no. (%)				0.156
■ 1-2	120 (7.5)	20 (5.6)	100 (8.0)	
■ 3	1488 (92.5)	338 (94.4)	1150 (92.0)	
Localisation – no. (%)				0.04
■ Ovar	1374 (82.7)	309 (82.8)	1065 (82.6)	
■ Fallopian tube	219 (13.2)	41 (11.0)	178 (13.8)	
■ Peritoneum	69 (4.2)	23(6.2)	46 (3.6)	

Total cohort:

- 1662 patients with stage IIIB-IV ovarian, tubal, and peritoneal carcinoma (Fig.1)
- median follow-up: 31.9 months

Treatment groups:

- PDS: 1289 (77.6%) patients.
- NACT: 373 (22.4%) patients.

Baseline characteristics:

- Well balanced between treatment groups
- Median age: 64.4 years
- Stage IV disease: 35% of the cohort.

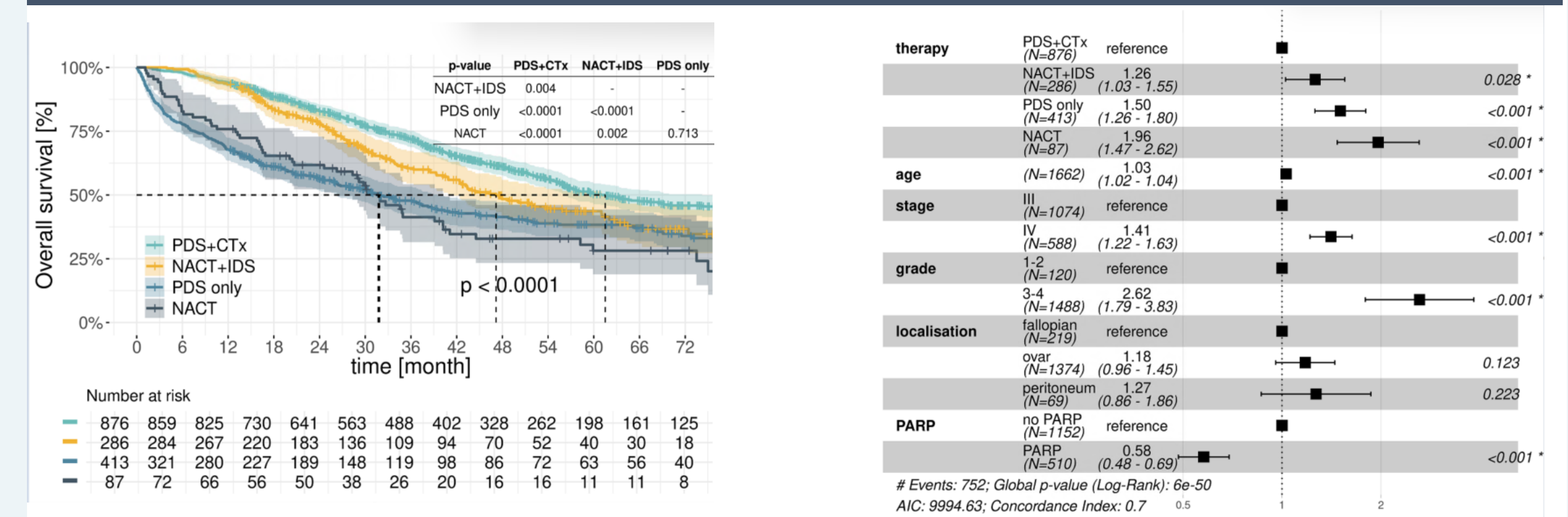
Table 2: Oncological Outcomes

	Overall	NAT	PDS	P - value
Therapy – no(%)	1662	373 (22.4)	1289(77.6)	<0.001
■ PDS+CTx	876(52.7)	0	876(68.0)	
■ PDS only	413(24.9)	0	413(32.0)	
■ NACT+ICD	286(17.2)	286(76.7)	0	
■ NACT	87(5.2)	87(23.3)	0	
90d mortality – no. (%)	84(5.1)	6(1.6)	78(6.1)	0.001
Residual disease – no.(%)				0.025
■ CR	885 (65.2)	187 (72.2)	698 (63.5)	
■ ≤1cm	242 (17.8)	34 (13.1)	208 (18.9)	
■ >1 cm	231 (17.0)	38 (14.7)	193 (17.6)	

- No surgery after NACT:** 87 (23.3%) NACT patients did not undergo IDS.
- Complete resection rates:** Higher in NACT+IDS (72.2% vs. 63.5% (p = 0.01))
- 90-day postoperative mortality:** Significantly higher after PDS:
 - 6.0% (PDS) vs. 1.6% (NACT+IDS) (p = 0.001)

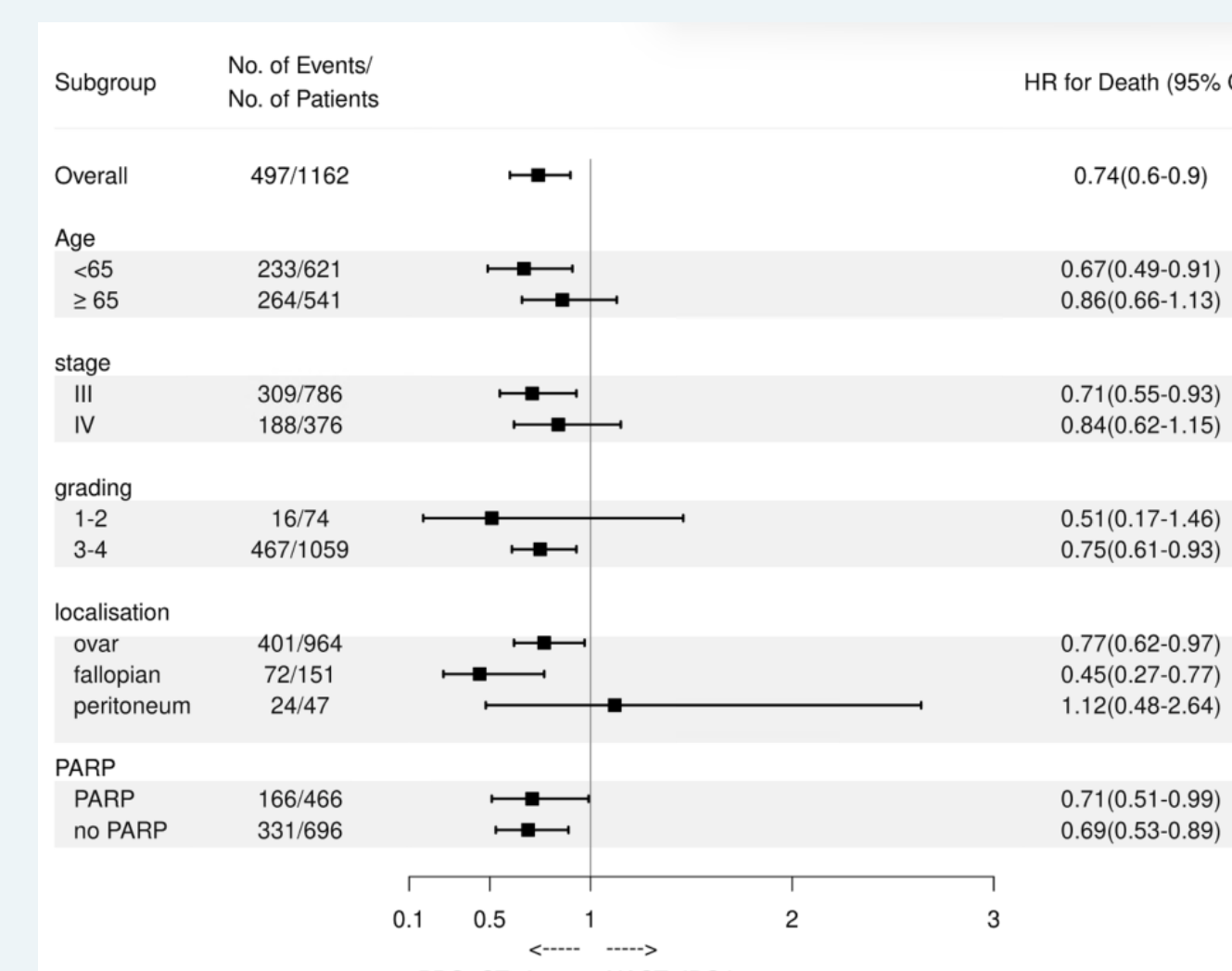
Fig. 2: Survival Analysis

A. OS: Kaplan Meier and multivariate Cox model



- PDS+CTx was associated with longer OS compared to NACT+IDS:
 - mOS:** 61 vs 47 months (p=0.004)
- Poorer outcomes** were observed in patients receiving NACT without subsequent IDS and patients with PDS only:
 - mOS:** 32 months (p<0.0001)
- Independent prognostic factors:**
 - age (HR 1.03, 95%CI 1.02-1.04), tumor grade (HR 2.6, 95%CI 1.8-3.8), and use of PARP inhibitors (HR 0.58, 95% CI 0.5-0.7)

B. PDS+CTx vs. NAT+IDS: Subgroup-analysis



- PDS+CTx: improved OS in the total cohort:
 - HR 0.7, 95%CI 0.6-0.9
- Strongest benefit:**
 - patients <65 years HR 0.67, 95%CI 0.5–0.9
 - stage III disease HR 0.7, 95%CI 0.6–0.9
- No significant benefit:
 - Patients older 65 years: HR 0.9, 95%CI 0.7–1.1
 - Stage IV disease HR 0.8, 95%CI 0.6–1.2

Conclusion

- While NACT+IDS achieves higher complete resection rates and lower 90-day mortality, patients who did not receive surgery after NACT had poor outcomes.
- PDS provided a survival benefit for patients under 65 or with stage III disease, but outcomes were similar in older patients and those with stage IV disease.
- CR and OS rates were in line with recent RCT data from TRUST.
- The study highlights the potential of using real-world data from modern state-run cancer registries to bridge the gap between clinical trials and everyday oncology practice, offering valuable insights for clinicians in real-world treatment decisions