

Bridging Clinical Trial Evidence and Real-World Practice : The Role of Zejula

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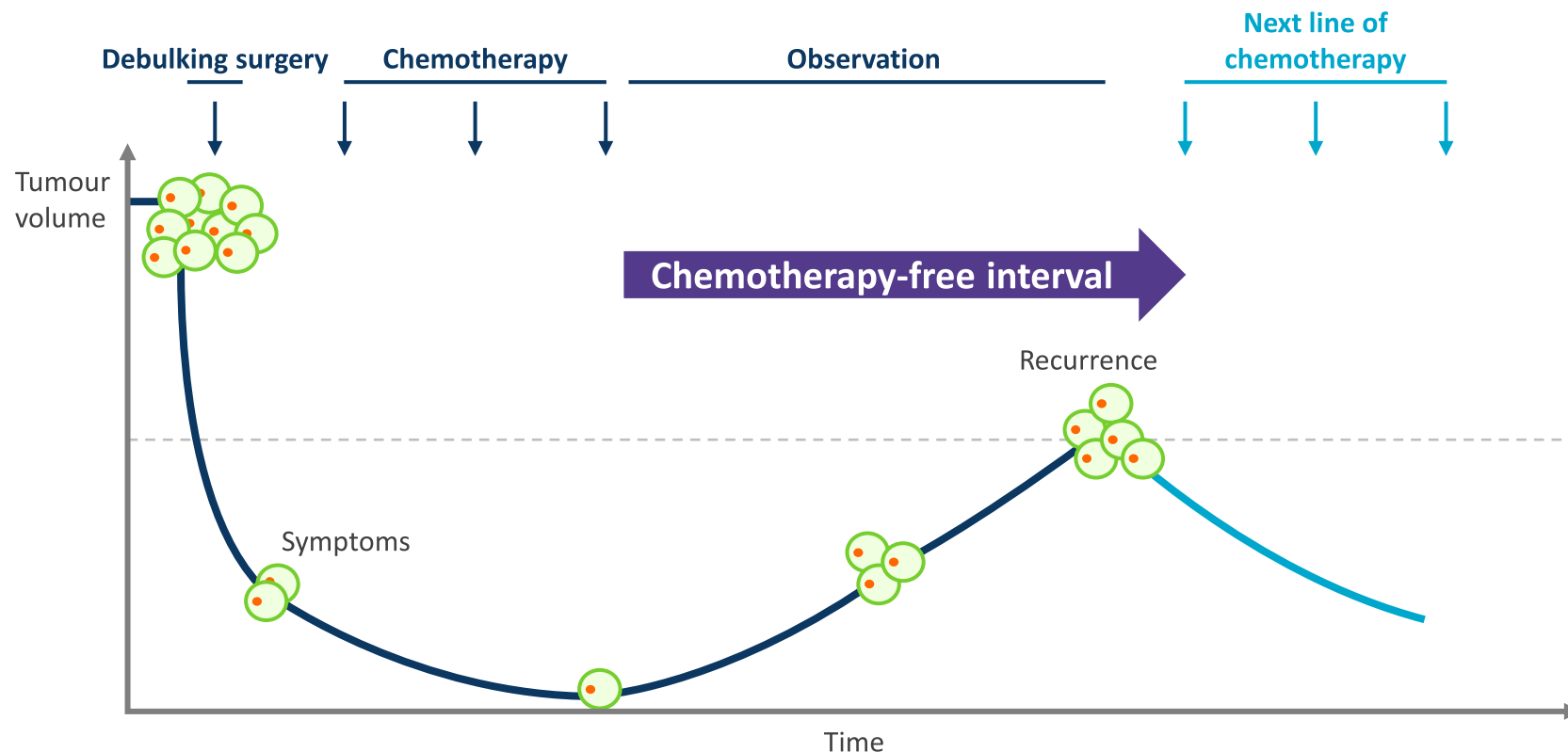
Advantages of AEJULA[®] (Niraparib)



Why Maintenance Therapy Matters

Maintenance therapy with PARPis have brought forward a paradigm shift, altering the natural course of disease in ovarian cancer by extending PFS

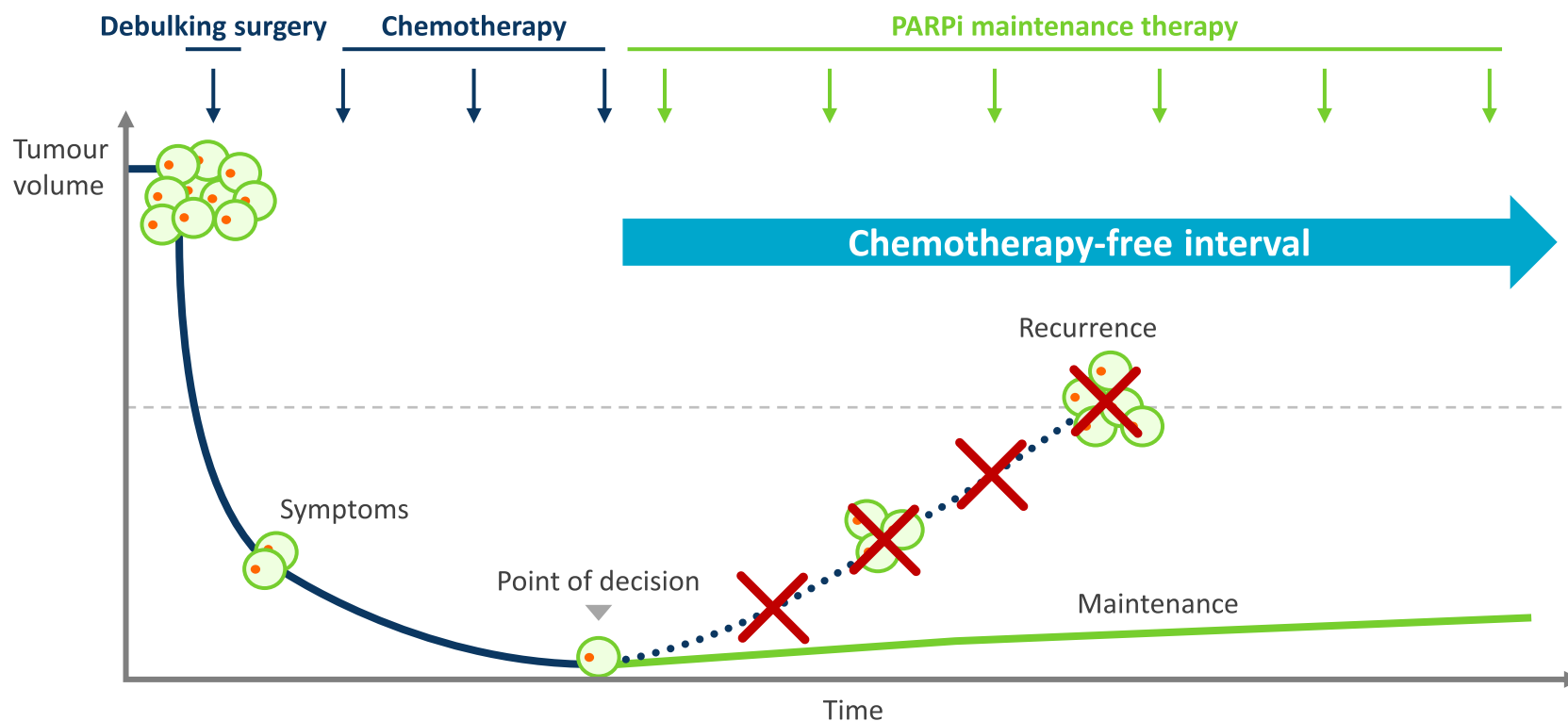
✓ Management of OC:¹



>70% of patients with advanced OC will recur within 3-5 years in the absence of 1L maintenance therapy^{2,3}

Maintenance therapy with PARPis have brought forward a paradigm shift, altering the natural course of disease in ovarian cancer by extending PFS

✓ Management of OC:¹



Goals of Maintenance therapy

- 1 Prolong benefit following surgery and chemotherapy
- 2 Improve survival (PFS and hopefully OS)
- 3 Manageable toxicity and no negative effects on QoL

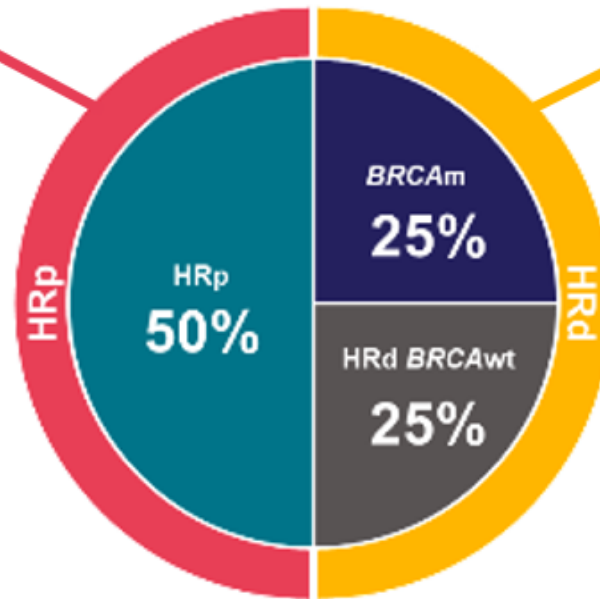
Approximately 50% of high-grade ovarian cancers are HRd¹

Proportion of patients with genomic mutations in ovarian cancer¹

HRp defined as “no detectable deficiency in DNA repair”¹

In a meta-analysis of the studies PAOLA-1, PRIMA, SOLO-1 and VELIA, HRp was associated with higher risk of progression in patients treated with PARPi maintenance therapy²

- Risk of progression in HRp patients is 0.83 (95% CI: 0.67–1.03)
- Risk of progression in HRd patients is 0.39 (95% CI: 0.29–0.53)



HRd defined as “deficiency in DNA repair”¹

HRd can arise from mutations in multiple components of the HR pathway, most frequently in *BRCA* genes^{1–3}

- About 50% of patients with OC are HRd
- Within the group of patients with HRd, about half are *BRCAm* and half *BRCAwt*
- HRd is associated with good prognosis and response to PARPi and platinum-based therapies
- *BRCAm* is associated with even better prognosis and response to PARPi and platinum-based therapies

1. Konstantinopoulos PA, Ceccaldi R, Shapiro GI, et al. Cancer Discov. 2015;5(11):1137–1154.

2. Cheng H, Yang J, Liu H, et al. Arch Gynecol Obstet. 2021;304(2):285–296.

3. Ngoi NYL and Tan DSP. ESMO Open. 2021;6(3):100144.

Differences in study populations

High-risk factors: *1

• Stage IV disease

• Visible residual disease or no surgery

• IDS/NACT or no surgery

• PR to chemotherapy²

• BRCAwt, BRCAnd, or missing

	Stage IV disease	Visible residual disease [†]	Neoadjuvant chemotherapy	PR to chemotherapy	BRCAwt
PRMIA ³⁻⁵	35%	47% [‡]	67%	31%	70% ^{††}
PAOLA-1 ^{6,7}	30%	40%	42%	27% ^{††}	70%
PRIME ⁸	28%	22% [§]	47%	18%	67% ^{§§}
ATHENA-MONO ⁹	25%	25% ^{**}	51%	18%	79%
SOLO1 ^{10,11}	17%	24%	35%	18%	0%



The colours are to indicate the proportion of ‘higher-risk patients’, where green represents the lowest proportion and red represents the highest population. [‡]PRIMA did not include patients with stage III RO after PDS

There are no completed direct head-to-head-trials of these products. These data are from different clinical trials, and since there are inherent limitations in cross-study comparisons, caution should be exercised in interpreting data. Theses data are for information purposes only and are not intended to imply or infer the noninferiority or superiority of either product, in terms of efficacy or safety.

PRIME was sponsored by Zai Lab (Shanghai) Co., Ltd. *Classification based on known risk factors for progression of advanced OC: disease stage, therapy modality, visible residual disease surgery, and BRCA mutation status. [†]Includes patients who did not receive surgery. [§]R2 or missing (postoperative residual disease status). ^{**}visible disease after chemotherapy. ^{††}Chemotherapy plus bevacizumab. BRCA, breast cancer gene; BRCAnd, BRCA status not determined. ^{‡‡}Including BRCA not determined. ^{§§}Germline BRCAwt only. BRCAwt, BRCA wild-type; IDS, interval debulking surgery; NACT, neoadjuvant chemotherapy; OC, ovarian cancer; PARPi, poly (ADP-ribose) polymerase inhibitor; PDS, primary debulking surgery; PR, partial response; RO, no residual disease; R2; >10 mm residual disease.

1. Chase DM., et al. presented at ESMO 2021.16-21 Sep (virtual). 2. www.uptodate.com/contents/medical-treatment-for-relapsed-epithelial-ovarian-fallopian-tube-or-peritoneal-cancer-platinum-sensitive-disease#disclaimerContent 3. González-Martin A, et al. *N Engl J Med* 2019;381:2391- 402. 4. González-Martin A, et al. presented at ESGO 2019, 2-5 Nov, Athens, Greece. 5. Braicu EI, et al. presented at ESGO SoA 2020. 14-16 Dec (virtual). 6. Ray-Coquard I, et al. *N Engl J Med* 2019;381:2416-28. 7. Ray-Coquard I. et al. *N Engl J Med* 2019;381:2416-28 (Supplementary Appendix). 8. Li N. et al. presented at SGO 2022.18-21 Mar. Phoenix. AZ. 9. Monk BJ, et al. *J Clin Oncol* 2022; <https://doi.org/10.1200/JCO.22.01003>. 10. Moore K. et al. *N Engl J Med* 2018;379:2495-505. 11. Moore K. et al. *N Engl J Med* 2018;379:2495-505 (Supplementary Appendix).

Current practice guidelines

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SPECIAL ARTICLE

ESMO Clinical Practice Guideline Express Update on the management of epithelial ovarian cancer

A. González-Martín¹ & J. A. Ledermann², on behalf of the ESMO Guidelines Committee^{*}

¹Department of Medical Oncology and Program in Solid Tumors Cima-Universidad de Navarra, Cancer Center Clínica Universidad de Navarra, Madrid and Pamplona, Spain; ²Department of Oncology, UCL Cancer Institute, University College London, London, UK

Available online 28 January 2026

2026

The flowchart outlines the management of newly diagnosed EOC (FIGO stage III-IV) based on the likelihood of complete cytoreduction. It starts with a decision point: 'Likelihood of complete cytoreduction [III, A]'. If 'Low', the path leads to 'Adequate biopsy tissue for histology and molecular testing [III, A]', followed by 'BRCA1/2 (germline and/or somatic) and HRD status testing [I, A; ESCAT I-A]^a'. If 'High', the path leads to 'Primary cytoreductive surgery [III, A]', followed by 'BRCA1/2 (germline and/or somatic) and HRD status testing [I, A; ESCAT I-A]^a'. Both paths then lead to '3 cycles of neoadjuvant paclitaxel-carboplatin alone [I, A] or with bevacizumab [II, B]'. After this, the path splits based on 'Interval cytoreductive surgery possible' or 'Interval cytoreductive surgery not possible and no overt disease progression'. The 'possible' path leads to 'Interval cytoreductive surgery [I, A], followed by 3 cycles of paclitaxel-carboplatin alone [I, A] or with bevacizumab [II, A]'. The 'not possible' path leads to '3 cycles of paclitaxel-carboplatin alone [I, A] or with bevacizumab [II, B]'. Both paths then lead to '6 cycles of paclitaxel-carboplatin alone or with bevacizumab [I, A; MCBS 3]^{b,c}'. Finally, the path splits based on 'BRCA1/2-mutated', 'BRCA1/2-wt/HRD-positive', or 'BRCA1/2-wt/HRD-negative'. The 'BRCA1/2-mutated' path leads to 'Maintenance with: Olaparib (2 years)^d [I, A; MCBS 4]^b Olaparib (2 years) with bevacizumab (15 months)^{d,e} [I, A; MCBS 3]^b Rucaparib (2 years)^d [I, A; MCBS 3]^b Niraparib (3 years)^d [I, A; MCBS 2]^b'. The 'BRCA1/2-wt/HRD-positive' path leads to 'Maintenance with: Rucaparib (2 years)^d [I, A; MCBS 3]^b Niraparib (3 years)^d [I, A; MCBS 2]^b Olaparib (2 years) with bevacizumab (15 months)^{d,e} [I, A; MCBS 1]^b'. The 'BRCA1/2-wt/HRD-negative' path leads to 'Maintenance with: Bevacizumab [I, A] Rucaparib (2 years)^d [I, B; MCBS 3]^b Niraparib (3 years)^d [I, B; MCBS 2]^b'.

```
graph TD
    Start([Newly diagnosed EOC FIGO stage III-IV]) --> Likelihood{Likelihood of complete cytoreduction III, A}
    Likelihood -- Low --> Biopsy[Adequate biopsy tissue for histology and molecular testing III, A]
    Likelihood -- High --> Surgery[Primary cytoreductive surgery III, A]
    Biopsy --> Testing1[BRCA1/2 germline and/or somatic and HRD status testing I, A; ESCAT I-Aa]
    Surgery --> Testing2[BRCA1/2 germline and/or somatic and HRD status testing I, A; ESCAT I-Aa]
    Testing1 --> Neo1[3 cycles of neoadjuvant paclitaxel-carboplatin alone I, A or with bevacizumab II, B]
    Testing2 --> Neo2[3 cycles of neoadjuvant paclitaxel-carboplatin alone I, A or with bevacizumab II, B]
    Neo1 --> Interval1{Interval cytoreductive surgery possible}
    Neo2 --> Interval2{Interval cytoreductive surgery not possible and no overt disease progression}
    Interval1 --> Surgery2[Interval cytoreductive surgery I, A, followed by 3 cycles of paclitaxel-carboplatin alone I, A or with bevacizumab II, A]
    Interval2 --> Neo3[3 cycles of paclitaxel-carboplatin alone I, A or with bevacizumab II, B]
    Surgery2 --> BRCA1_2_mutated[BRCA1/2-mutated]
    Neo3 --> BRCA1_2_wt_HRD_positive[BRCA1/2-wt/HRD-positive]
    Neo2 --> BRCA1_2_wt_HRD_negative[BRCA1/2-wt/HRD-negative]
    BRCA1_2_mutated --> Maintenance1[Maintenance with: Olaparib 2 yearsd I, A; MCBS 4b Olaparib 2 years with bevacizumab 15 monthsd,e I, A; MCBS 3b Rucaparib 2 yearsd I, A; MCBS 3b Niraparib 3 yearsd I, A; MCBS 2b]
    BRCA1_2_wt_HRD_positive --> Maintenance2[Maintenance with: Rucaparib 2 yearsd I, A; MCBS 3b Niraparib 3 yearsd I, A; MCBS 2b Olaparib 2 years with bevacizumab 15 monthsd,e I, A; MCBS 1b]
    BRCA1_2_wt_HRD_negative --> Maintenance3[Maintenance with: Bevacizumab I, A Rucaparib 2 yearsd I, B; MCBS 3b Niraparib 3 yearsd I, B; MCBS 2b]
```

1. ESMO Clinical Practice Guideline Express Update on the management of epithelial ovarian cancer. ESMO Open. 2026;11(2):106032. González-Martín A and Ledermann JA, on behalf of the ESMO Guidelines Committee

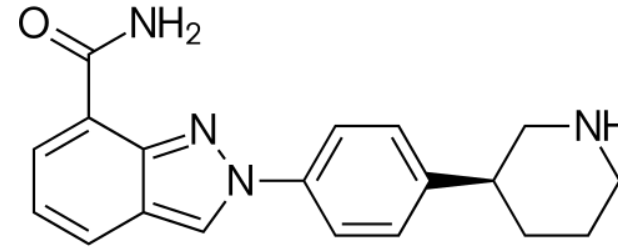
Niraparib is a small molecule PARP inhibitor indicated for the treatment of ovarian cancer

➤ Type of drug^{1,2}

- Antineoplastic agent
- Inhibitor of PARP-1 and PARP-2

➤ Indication³

- Niraparib is indicated for **the maintenance treatment of adult patients with recurrent high-grade serous epithelial ovarian, fallopian tube, or primary peritoneal cancer who are in a complete or partial response to platinum-based chemotherapy**



➤ Dosage and administration³

- Recommended dose of **200 mg** per day for patients of **<77 kg** or baseline **platelet count <150,000/ μ L**
- Recommended dose of **300 mg** per day for all other patients
- **Start treatment of niraparib no later than 8 weeks** after the most recent platinum-containing regimen
- Orally once daily
- Administration at **any time of day, without regard to meals**

1. Tesaro Inc. Zejula U.S. Prescribing Information. Available at: https://www.accessdata.fda.gov/drugsatfda_docs/label/2017/208447lbl.pdf (Accessed April 2019)

2. European Medicines Agency. Zejula Summary of Product Information. Available at: https://www.ema.europa.eu/documents/product-information/zejula-epar-product-information_en.pdf (Accessed in April 2026).

3. 제줄라® 정 국내 허가사항. <https://nedrug.mfds.go.kr/pbp/CCBBB01/getItemDetailCache?cacheSeq=202401351aupdateTs2026-02-13%2011:32:57.0b> Accessed in Apr 2026

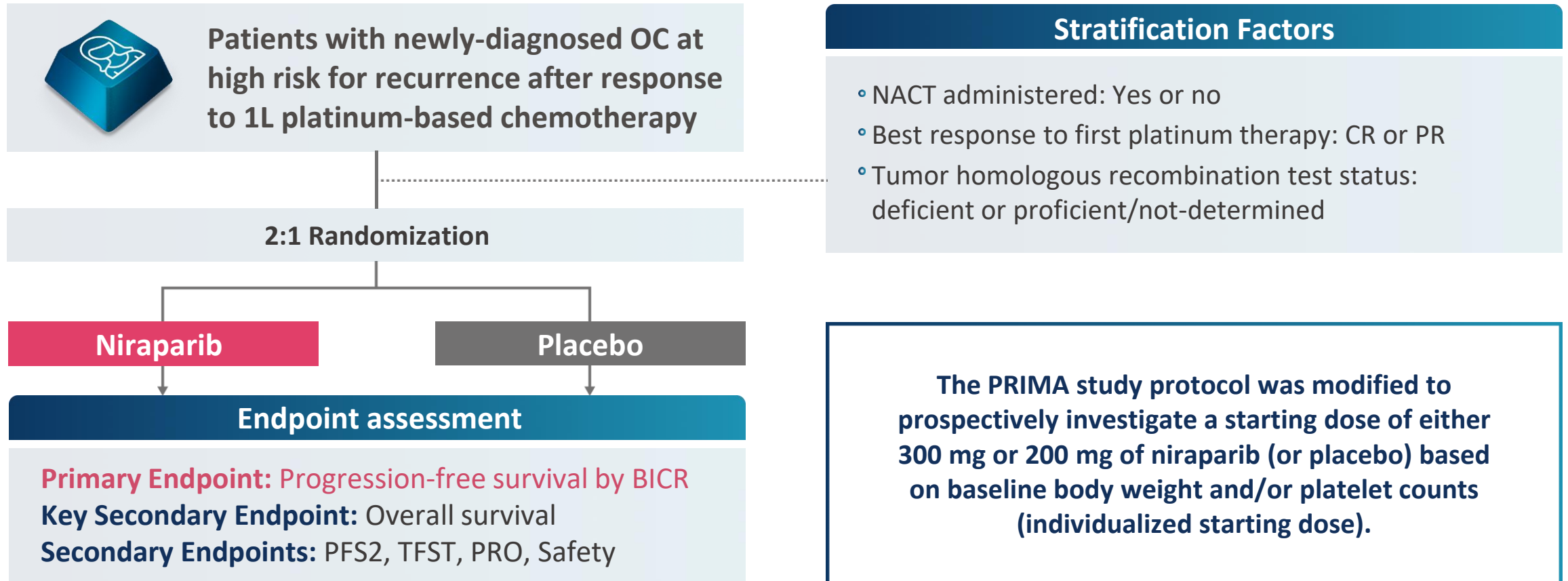


Long-term Evidence from PRIMA

PRIMA study

- PRIMA was a landmark Phase III trial in advanced ovarian cancer

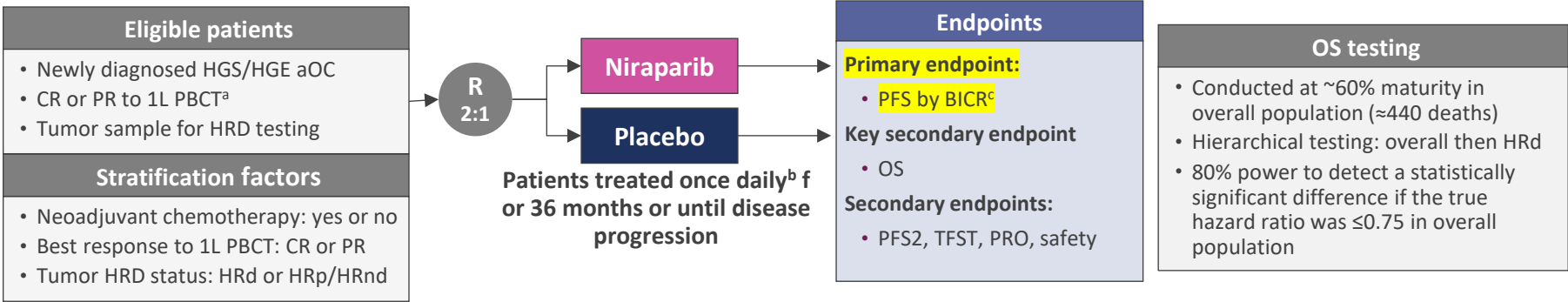
Study Design



PRIMA 6.2 year updated long-term analysis

PRIMA/ENGOT-OV26/GOG-3012 trial of niraparib 1L maintenance

Phase 3 PRIMA trial enrolled patients with newly diagnosed aOC **at a high risk for disease recurrence with stage IV disease, residual disease, and NACT.**



Key risk characteristics of PRIMA population ^{1,2}				
Disease stage		Residual disease		Tumor HRD/ <i>BRCA</i> status
Initial treatment	35.1% stage IV disease at diagnosis	>99% stage III disease at diagnosis with residual disease after primary debulking surgery		50.9% HRd
	66.7% received neoadjuvant chemotherapy	47.5% postoperative visible residual disease or no debulking surgery		30.4% HRd/ <i>BRC</i> Am
	30.6% achieved partial response to 1L PBCT			34.0% HRp

PRIMA/ENGOT-OV26/GOG-3012 trial (NCT02655016). aPatients must have either had CA-125 in the normal range or a $\geq 90\%$ decrease in CA-125 during 1L treatment that was stable for at least 7 days. At baseline, 7.1% of the overall population had CA-125 above the upper limit of normal. bAt study start, all patients received a fixed starting dose of 300 mg once daily. Subsequently, the protocol was updated to use an individualized starting dose adjusted according to baseline body weight/platelet count. cPrimary endpoint of PFS by BICR assessed by hierarchical testing, first in patients with HRd tumors and then in the overall population. 1L, first-line; aOC, advanced ovarian cancer; BICR, blinded independent central review; *BRC*Am, *BRCA*-mutated; CA-125, cancer antigen 125; CR, complete response; HGE, high-grade endometrioid; HGS, high-grade serous; HRd, homologous recombination deficiency; HRd, homologous recombination deficient; HRnd, homologous recombination status not determined; HRp, homologous recombination proficient; OS, overall survival; PBCT, platinum-based chemotherapy; PFS, progression-free survival; PFS2, progression-free survival 2; PR, partial response; PRO, patient-reported outcomes; TFST, time to first subsequent therapy.

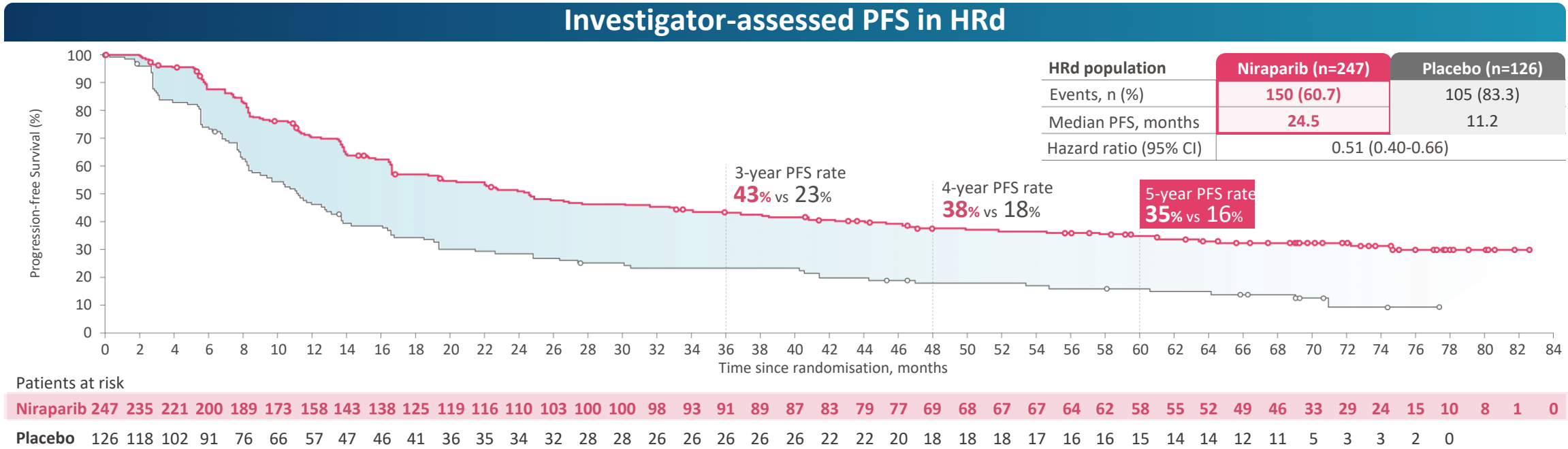
1. González-Martín A, et al. N Engl J Med. 2019;381(25):2391–2402. 2. O’Cearbhaill RE, et al. Gynecol Oncol. 2022;166(1):36–43.

PRIMA 6.2 year updated long-term analysis

- Updated long-term PFS^{a,b} (ad hoc, investigator-assessed)

Data cutoff date, 8 April 2024; median follow-up, 6.2 years

→ Niraparib PFS benefit sustained with additional follow-up in the HRd populations



- Among patients alive at 5 years in the HRd population, patients who received niraparib were twice as likely to be progression free (35%) than patients who received placebo (16%)
- Delaying progression is critical to maintain health-related quality of life¹

^a At study start, patients were monitored for disease progression (CT/MRI) every 12 weeks (3 cycles); in August 2019, the protocol was amended to monitor patients who stayed on study treatment for more than 2 years for disease progression every 24 weeks (6 cycles).

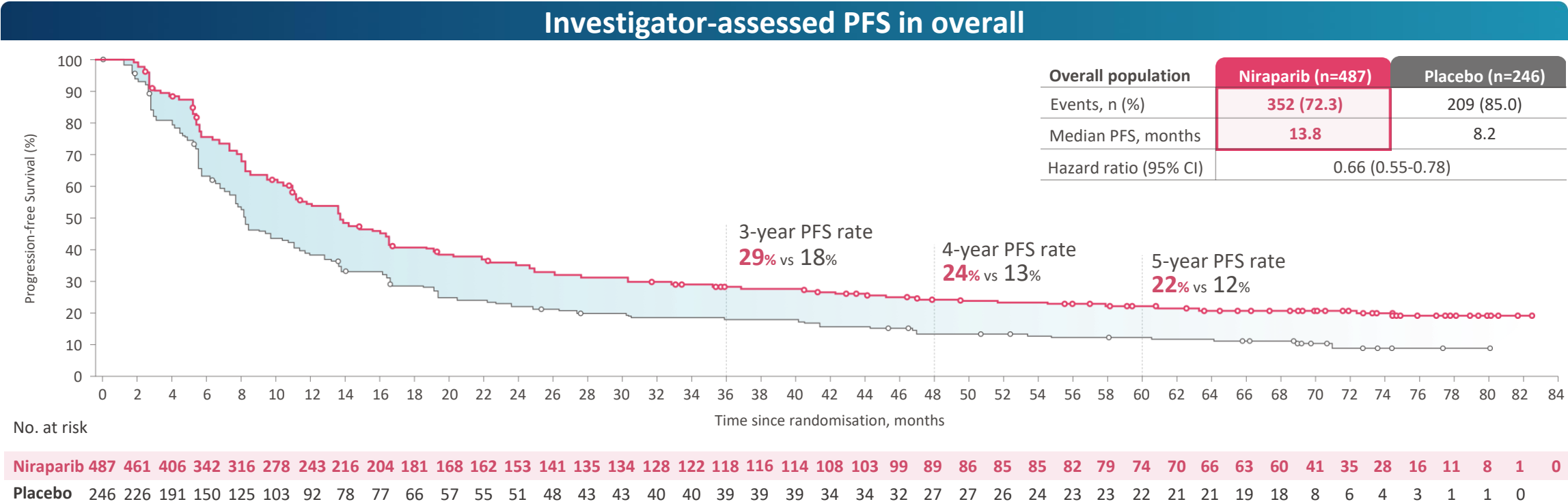
^b PFS hazard ratios and associated 95% CI calculated using stratified Cox proportional hazards model. For all analyses, stratification factors were those used in randomization.

PRIMA 6.2 year updated long-term analysis

- Updated long-term PFS^{a,b} (ad hoc, investigator-assessed)

Data cutoff date, 8 April 2024; median follow-up, 6.2 years

Niraparib PFS benefit sustained with additional follow-up in the Overall populations

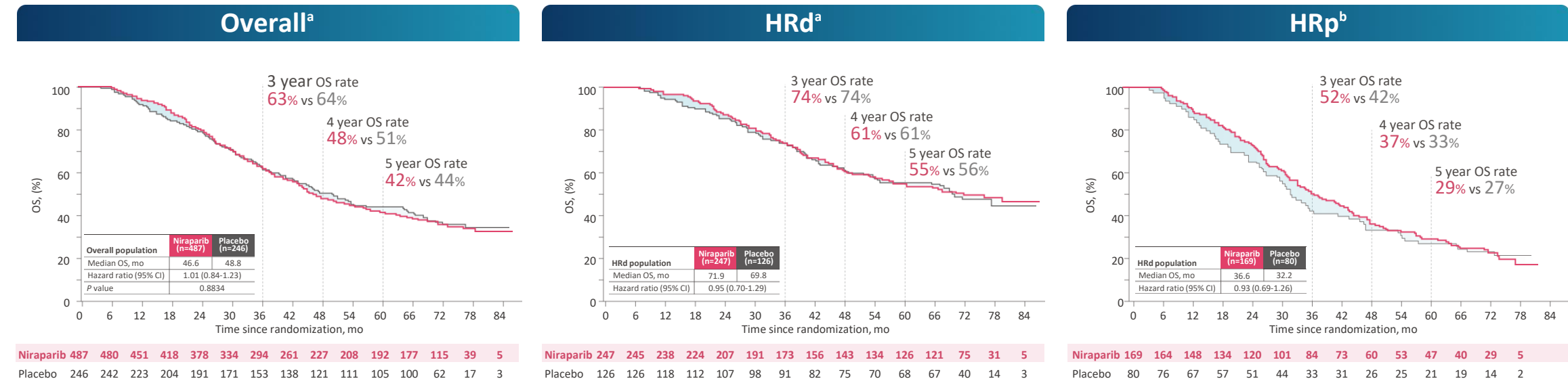


^a At study start, patients were monitored for disease progression (CT/MRI) every 12 weeks (3 cycles); in August 2019, the protocol was amended to monitor patients who stayed on study treatment for more than 2 years for disease progression every 24 weeks (6 cycles).
^b PFS hazard ratios and associated 95% CI calculated using stratified Cox proportional hazards model. For all analyses, stratification factors were those used in randomization.

PRIMA 6.2 year updated long-term analysis

- Final OS (62.5% maturity in overall population)

No difference in OS between niraparib and placebo arms in the overall, HRd, and HRp populations



OS results for all prespecified biomarker-defined subgroups consistent with overall population^c

However, assessment of long-term efficacy outcomes in high-risk aOC may be complicated by multiple factors

- Patient population
- Extended Post-progression survival
- Subsequent therapy

^a Hazard ratios and 95% CIs for overall and HRd populations calculated using stratified Cox proportional hazards model with randomization stratification factors. ^b Hazard ratio and 95% CI for HRp population calculated using unstratified Cox proportional hazards model. ^c OS results for the HRnd population (unstratified): hazard ratio (95% CI), 1.39 (0.88–2.19).

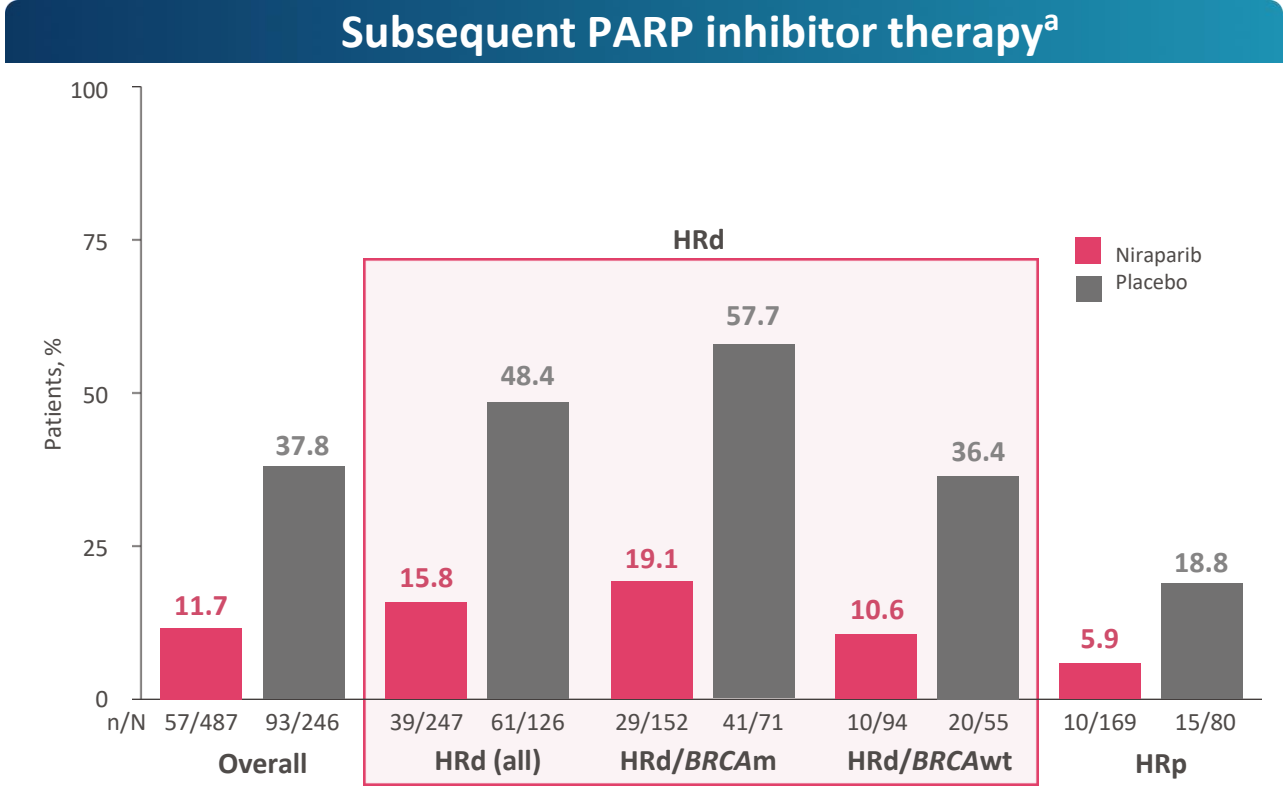
aOC advanced ovarian cancer HRd homologous recombination deficient HRnd homologous recombination status not determined HRp homologous recombination proficient OS overall survival Nir niraparib PBO placebo

1. González-Martín A, et al. Final Overall survival in patients with newly diagnosed advanced ovarian cancer treated with niraparib first-line maintenance: results from PRIMA/ENGOT-OV26/GOG-3012. presented at ESMO 2024, Barcelona, Spain, Sep 13-17, 2024.

PRIMA 6.2 year updated long-term analysis

- Subsequent PARP inhibitor therapy

↳ 3-fold higher subsequent PARP inhibitor use in placebo arm than niraparib arm across populations



Subsequent PARP inhibitor use

- Most predominant in HRd population, with highest use in HRd/BRCAm population.
- Most patients initiated in the 2L setting

Any subsequent PARP inhibitor by treatment line, % ^a	Overall		HRd	
	Niraparib (n=487)	Placebo (n=246)	Niraparib (n=247)	Placebo (n=126)
Any treatment line	11.7	37.8	15.8	48.4
2L	8.2	30.5	13.0	37.3
3L+	3.5	7.3	2.8	11.1

^a Percentages calculated out of the total number of patients in each population, not the number of patients who experienced disease progression.

What Have We Learned from PRIMA?

- **Conclusions for PRIMA final analysis**

Median follow-up, 6.2 years

- ↳ **PRIMA enrolled patients with advanced high-grade serous/endometrioid OC at high risk for recurrence**
- ↳ **Sustained PFS benefit observed with niraparib with additional follow-up in the overall and HRd populations**
 - Among patients who were alive at 5 years in the HRd population, those who received niraparib were twice as likely to be progression free as patients who received placebo (35% vs 16%)
 - Remaining progression free is critical to maintain health-related quality of life
No difference in OS between niraparib and placebo arms in overall population
- ↳ **No difference in OS between niraparib and placebo arms in overall population and by HRd status**
 - 3-fold higher subsequent PARP inhibitor use in placebo arm than niraparib arm across populations (HRd: 48.4% vs 15.8%)
- ↳ **Long-term safety remained consistent with the identified safety profile of niraparib**
- ↳ **Long-term data support the benefit of niraparib as 1L maintenance therapy regardless of HRd status**

But do these benefits translate into routine clinical practice?

Quality-adjusted progression-free survival and quality-adjusted time without symptoms of disease or toxicity results from the PRIMA/ENGOT-OV26/GOG-3012 final analysis

QA-PFS and Q-TWiST results from PRIMA study



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1070P Quality-adjusted progression-free survival (QA-PFS) and quality-adjusted time without symptoms of disease or toxicity (Q-TWiST) results from the PRIMA/ENGOT-OV26/GOG-3012 final analysis

[H. Denys](#)¹ · [D.M. Chase](#)² · [B. Pardo Búrdalo](#)³ · ... · [S. Kim](#)¹⁸ · [A. González-Martín](#)¹⁹ · [B.J. Monk](#)²⁰ ... [Show more](#)

Quality-adjusted progression-free survival and quality-adjusted time without symptoms of disease or toxicity results from the PRIMA/ENGOT-OV26/GOG-3012 final analysis

- **Results (Long-term Benefit Beyond PFS: Quality-adjusted Survival)**
 - **The QA-PFS and Q-TWiST gains observed with niraparib treatment** in the primary analysis were extended in the final analysis

Comparison of QA-PFS and Q-TWiST outcomes in the primary and final analyses

Restricted mean duration difference between niraparib and placebo (95% CI), mo		
	Primary analysis ⁶	Final analysis
Overall ^a		
QA-PFS gain	4.1 (2.2, 5.8)	7.9 (4.7, 11.4)
Q-TWiST gain	3.5 (1.7, 5.6)	9.0 (5.4, 13.4)
HRd ^b		
QA-PFS gain	6.5 (3.9, 8.9)	14.1 (8.5, 19.2)
Q-TWiST gain	5.9 (3.5, 8.6)	15.9 (9.3, 21.6)
HRp ^c		
QA-PFS gain	1.2 (-1.0, 3.8)	2.2 (-1.8, 6.7)
Q-TWiST gain	1.5 (-0.6, 4.0)	2.7 (-1.8, 7.8)

^aAt 27.8 months for the primary analysis; 80.1 months for the final analysis.

^bAt 27.8 months for the primary analysis; 77.4 months for the final analysis.

^cAt 22.1 months for the primary analysis; 74.7 months for the final analysis.

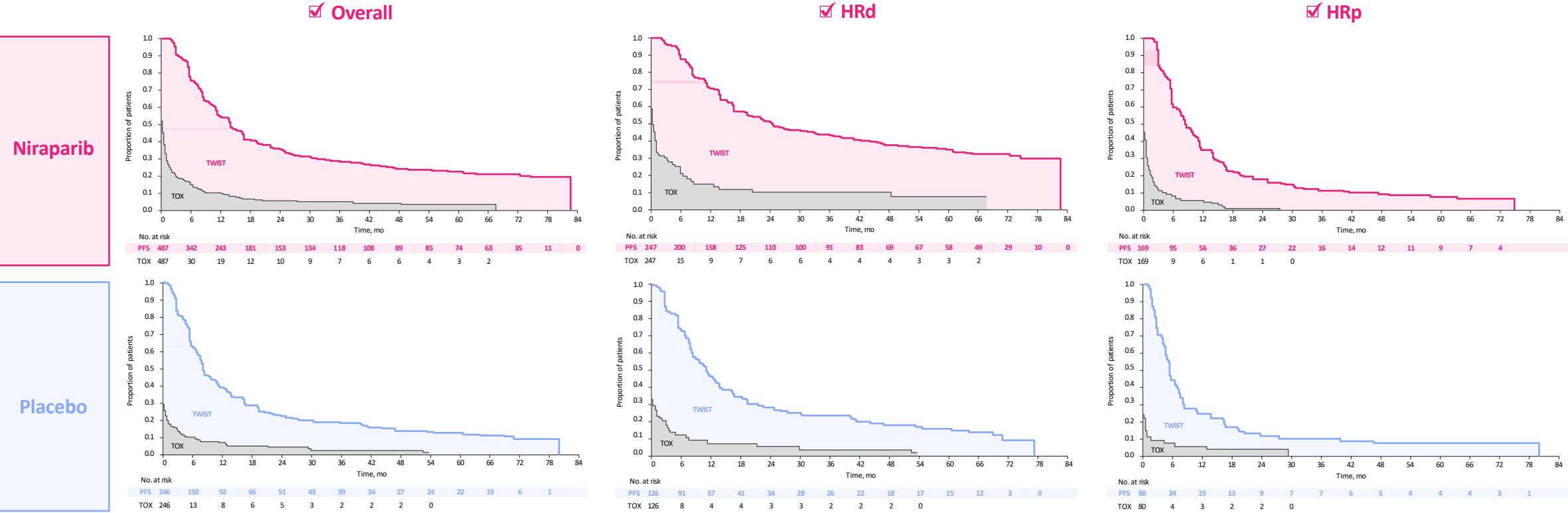
Quality-adjusted progression-free survival and quality-adjusted time without symptoms of disease or toxicity results from the PRIMA/ENGOT-OV26/GOG-3012 final analysis

- Results

 - Q-TWiST

 - Partitioned survival curves for the overall, HRd, and HRp populations are shown in Figure

Partitioned survival curves



Quality-adjusted progression-free survival and quality-adjusted time without symptoms of disease or toxicity results from the PRIMA/ENGOT-OV26/GOG-3012 final analysis

- **Conclusions**

- In the PRIMA final analysis, **niraparib first-line maintenance treatment was associated with significant gains in restricted mean QA-PFS and Q-TWiST durations vs placebo in the overall, HRd, and HRp populations**
- Niraparib treatment gains for restricted mean duration of QA-PFS and Q-TWiST were extended from the primary to final analysis, likely because PFS gains were sustained with longer follow-up while the majority of treatment-emergent AEs occur within the first 3 months of niraparib treatment
- By integrating the quantity and quality of progression-free time, these findings further support the **clinical benefit of niraparib versus placebo for the maintenance treatment of patients with newly diagnosed advanced OC that responded to first-line platinum based chemotherapy**



From Clinical Trials to Real-World Practice

Real-world outcomes in patients with epithelial ovarian cancer who received first-line maintenance niraparib: final results from the **1NSPIRE chart review study**



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1227eP Real-world (rw) outcomes in patients (pts) with epithelial ovarian cancer (EOC) who received first-line maintenance (1LM) niraparib: Final results from the 1NSPIRE chart review study

[F.B. Musa](#)¹ · [B.J. Rimel](#)² · [J. Lim](#)³ · ... · [A. Golembesky](#)⁸ · [P.H. Thaker](#)⁹ · [L.M. Landrum](#)¹⁰ ... [Show more](#)

Real-world outcomes in patients with epithelial ovarian cancer who received first-line maintenance niraparib: final results from the 1NSPIRE chart review study

Results_Patients

✓ All patients	✓ Patients with CR/PR to 1L PBCT
Age Calendar icon Median age, 67 y (IQR, 60–73 y) Age group at index: <75 y, 80.7% ≥75 y, 19.3%	Age Calendar icon Median age, 68 y (IQR, 60–73 y) Age group at index: <75 y, 79.8% ≥75 y, 20.2%
Race People icon 12.4% black/ African American/ other minority race 5.0% Hispanic or Latino	Race People icon 12.4% Black/ African American/ other minority race 5.6% Hispanic or Latino
Region US flag icon 46.8% Midwest 27.5% South 25.7% Northeast 0% West	Region US flag icon 49.4% Midwest 26.4% South 24.2% Northeast 0% West
Practice type Stethoscope icon 57.3% Community based 38.1% University based 3.7% Both	Practice type Stethoscope icon 57.3% Community based 37.6% University based 4.5% Both
Insurance type Insurance icon 25.2% Employer based 51.8% Medicare 22.9% Other/ unknown/uninsured	Insurance type Insurance icon 21.9% Employer based 56.2% Medicare 21.9% Other/ unknown/uninsured

Values in table are n (%) unless noted otherwise.
*Other includes clear cell, mucinous, endometrioid, epithelial not otherwise specified, or unknown.
^bAmong patients who received cytoreductive surgery.

Characteristic	All patients (N=218)	Patients with CR/PR to 1L PBCT (n=178)
ECOG PS at index		
0–1	192 (88.1)	156 (87.6)
2	7 (3.2)	5 (2.8)
Missing	19 (8.7)	17 (9.6)
Stage at initial diagnosis		
I–II	11 (5.0)	7 (3.9)
III	132 (60.6)	107 (60.1)
IV	39 (17.9)	33 (18.5)
Unknown	36 (16.5)	31 (17.4)
Histology		
Serous	194 (89.0)	158 (88.8)
Other ^a	24 (11.0)	20 (11.2)
Biomarker status		
HRd	82 (37.6)	62 (34.8)
BRCAm	24 (11.0)	21 (11.8)
BRCAwt	49 (22.5)	35 (19.7)
BRCA unknown	9 (4.1)	6 (3.4)
HRp	57 (26.1)	47 (26.4)
BRCAwt/HRD status unknown	66 (30.3)	57 (32.0)
Both BRCA and HRD status unknown	13 (6.0)	12 (6.7)
Type of surgery		
PCS	85 (39.0)	66 (37.1)
ICS	110 (50.5)	96 (53.9)
No surgery	18 (8.3)	13 (7.3)
Unknown/missing	5 (2.3)	3 (1.7)
Residual disease status ^b		
Visible residual disease	45 (23.1)	35 (21.6)
No visible residual disease	114 (58.5)	96 (59.3)
Unknown/missing	39 (20.0)	33 (20.4)
Received 1L platinum-containing regimen	217 (99.5)	178 (100.0)
Received 1L bev-containing regimen	19 (8.7)	18 (10.1)
Follow-up time, median (IQR), mo	22.6 (16.1–33.5)	23.6 (16.4–33.8)

- **This final analysis included data from 218 patients across 18 US sites**
 - Median (IQR) follow-up time was 22.6 months (16.1–33.5 months)
- Overall, 178 patients (81.7%) had a CR/PR to 1L PBCT, and 31 (14.2%) had stable disease
- Demographic and clinical characteristics were similar between the overall patient population and the subgroup of patients with a CR/PR
- Overall, **37.6% of patients had HRd, 26.1% had HRp, and 30.3% had BRCAwt/HRD status unknown**
 - Both BRCA and HRD status were unknown for 6.0% of patients overall

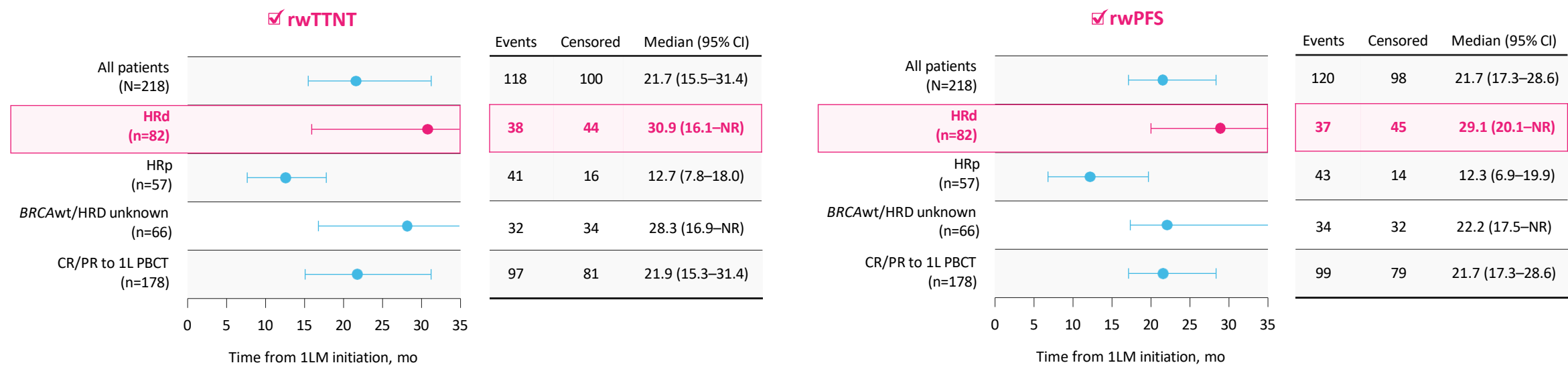
1L, first-line; bev, bevacizumab; BRCAm, BRCA-mutated; BRCAwt, BRCA wild-type; CR, complete response; ECOG PS, Eastern Cooperative Oncology Group performance status; HRD, homologous recombination deficiency; HRd, homologous recombination deficient; HRp, homologous recombination proficient; ICS, interval cytoreductive surgery; PBCT, platinum-based chemotherapy; PCS, primary cytoreductive surgery; PR, partial response.
Reference 1. F. B. Musa, et al. presented at 2025 EMSO Annual Meeting, Sep 2025

Real-world outcomes in patients with epithelial ovarian cancer who received first-line maintenance niraparib: final results from the 1NSPIRE chart review study

Results

- Overall, the observed median rwTTNT and rwPFS were both 21.7 months for all patients (Figure 3)
- When examining real-world outcomes by biomarker subgroup, the longest observed median rwTTNT and rwPFS were among patients with HRd status**
- Observed median rwTTNT and rwPFS among patients in the subgroup of patients with CR/PR to 1L PBCT were similar to those in the overall population

Real-world outcomes among all patients, stratified by biomarker status, and among patients with CR/PR to 1L PBCT



Real-world outcomes in patients with epithelial ovarian cancer who received first-line maintenance niraparib: final results from the 1NSPIRE chart review study

- **Conclusions**

- **Real-world outcomes aligned with expectations for key biomarker subgroups, with numerically longer rwTTNT and rwPFS observed in the HRd subgroup** versus the overall population
- For patients with advanced EOC receiving 1LM niraparib monotherapy in routine clinical practice, **real-world outcomes exceeded expectations based on the PRIMA trial results.** This was true in all biomarker subgroups, including patients with HRp status
 - This finding may be due to:
 - The inclusion of patients with stage III EOC and no visible residual disease in the 1NSPIRE study
 - Clinicians' ability to identify those most likely to benefit from niraparib in routine clinical practice
- Compared with all patients, **baseline demographic and clinical outcomes were similar in the subgroup of patients with a CR or PR to 1L PBCT**



Real-World Evidence with Niraparib in Korea

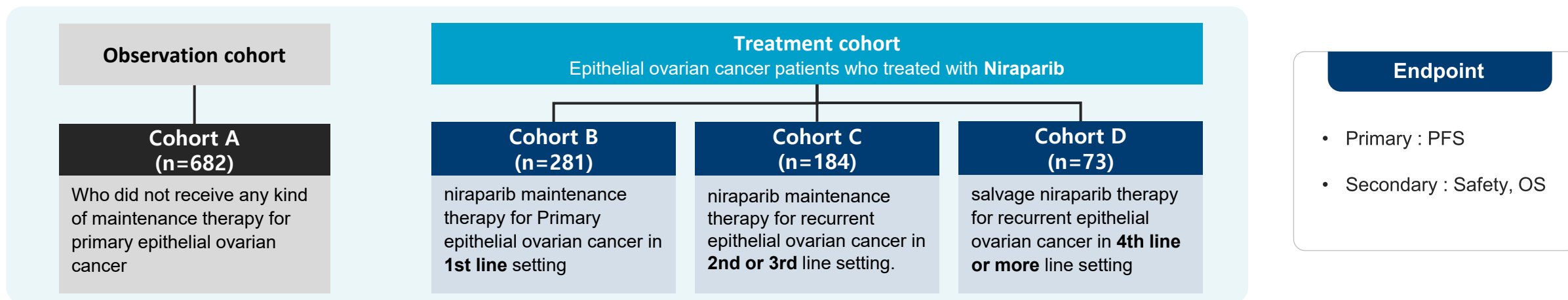
Real-world clinical study

REFIRM

PI : Jeong-Yeol Park, Asan Medical Center

The **R**eal world **E**fficacy and **sa**Fety of **n**irapa**R**ib in Korean women with **pr**i**M**ary and recurrent epithelial ovarian cancer, (Multicenter, retrospective cohort and chart-review study)

- **Objective:** ✓ To evaluate the efficacy and safety of niraparib in Korean women with primary and recurrent epithelial ovarian cancer who underwent niraparib maintenance therapy
- ✓ To evaluate the efficacy and safety of salvage niraparib therapy in Korean women with heavily pretreated epithelial ovarian cancer.



PFS, progression-free survival; OS, overall survival

Study Background

- It has been three years since niraparib was introduced into Korea, and about 600 Korean patients with epithelial ovarian cancer have been treated with this drug.
- The efficacy and safety of niraparib in primary and recurrent epithelial ovarian cancer were well demonstrated in the NOVA trial and the PRIMA trial, and the efficacy and safety of niraparib in heavily pretreated epithelial ovarian cancer patients were confirmed in the -QUADRA trial.
- However, safety and efficacy data in Korean women are still scanty.
- The purpose of this study was to evaluate the safety and efficacy of niraparib in Korean women with primary and recurrent epithelial ovarian cancer.

Study Institutions and Study Period

- Study Institutions : 9 tertiary centers in Korea
 - Asan Medical Center
 - National Cancer Center
 - Seoul St. Mary's Hospital
 - Seoul National University Hospital
 - Samsung Medical Center
 - Severance Hospital
 - Keimyung University Hospital
 - Pusan National University Hospital
- Study Period
 - Clinicopathologic data were gathered from patient who treated **between December 2019 and October 2022.**

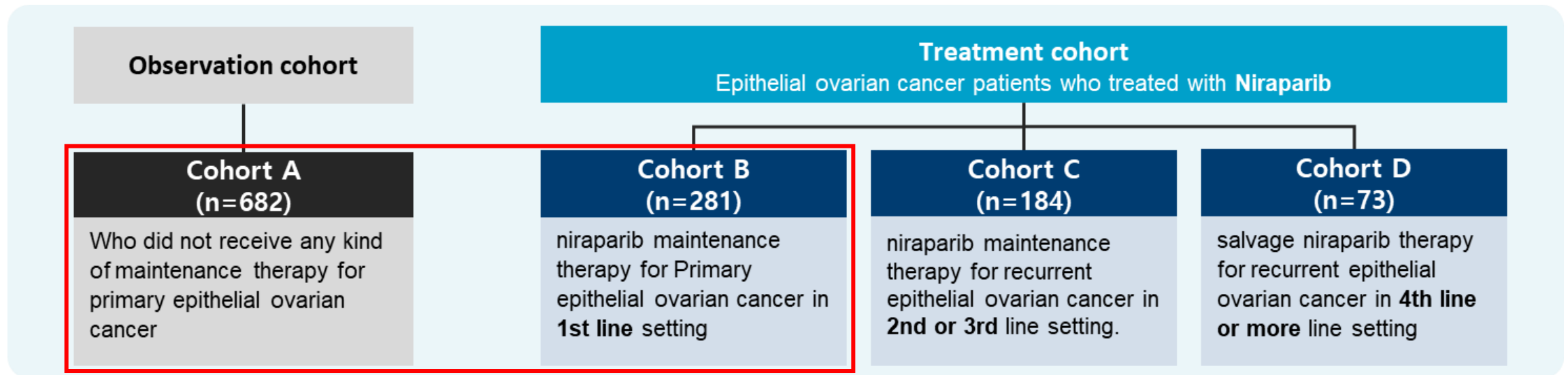
REFIRM Study : Cohort A & B

Cohort A & B

REFIRM

PI : Jeong-Yeol Park, Asan Medical Center

The **R**Real world **E**fficacy and **sa**Fety of **n**irapa**R**ib in Korean women with **pr**i**M**ary and recurrent epithelial ovarian cancer, (Multicenter, retrospective cohort and chart-review study)



Inclusion Criteria

- Histologically confirmed primary epithelial ovarian, fallopian tube, or primary peritoneal cancer with known germline and/or somatic BRCA mutation status who completed first-line platinum-based chemotherapy and showed partial or complete response between December 2019 and October 2022
- Cohort A : patients who received first-line maintenance niraparib
Cohort B : Patients who did not receive any maintenance therapy

Statistical Analysis

- **Unmatched overall cohort**

- Baseline characteristics were compared between groups using the chi-square or Fisher's exact test for categorical variables and the Wilcoxon rank-sum test for continuous variables.
- PFS and OS were estimated using the Kaplan–Meier method and compared between groups using the log-rank test.

- **Matched cohort**

- To reduce potential confounding, 1:1 propensity score matching (PSM) was performed using the nearest-neighbor algorithm with a caliper of 0.4, implemented via the MatchIt package in R (version 4.5.0).
- Matching was based on age at diagnosis, receipt of neoadjuvant chemotherapy, and BRCA mutation status.

Unmatched Overall Cohort : Baseline Characteristics

Characteristics	No Maintenance (n = 306)	Niraparib (n =248)	P
Age			
median (range)	59 (19–85)	56 (33–91)	0.01
Histology			0.009
Serous	264 (86.3%)	230 (92.7%)	
Endometrioid	14 (4.6%)	12 (4.8%)	
Clear cell	15 (4.9%)	6 (2.4%)	
Mixed	12 (3.9%)	0 (0.0%)	
Other [†]	1 (0.3%)	0 (0.0%)	
Stage			0.18
Stage III			
A	33 (10.8%)	18 (7.3%)	
B	25 (8.2%)	16 (6.5%)	
C	136 (44.4%)	103 (41.5%)	
Stage IV	112 (36.6%)	111 (44.8%)	
Receipt of neoadjuvant chemotherapy			0.012
No	207 (67.6%)	141 (56.9%)	
Yes	99 (32.4%)	107 (43.1%)	
Outcomes of cytoreductive surgery (n,%)			
Primary cytoreductive surgery			0.21
Complete	150 (72.5%)	93 (66.0%)	
Optimal (Residual < 1cm)	34 (16.4%)	34 (24.1%)	
Suboptimal (Residual ≥ 1cm)	23 (11.1%)	14 (9.9%)	
Interval debulking surgery			0.099
Complete	63 (63.6%)	74 (69.2%)	
Optimal (Residual < 1cm)	26 (26.3%)	30 (28.0%)	
Suboptimal (Residual ≥ 1cm)	10 (10.1%)	3 (2.8%)	
No. of cycles of platinum-based CTx			0.042
6	226 (73.9%)	175 (70.6%)	
7-9	54 (17.6%)	62 (25.0%)	
10-12	9 (2.9%)	6 (2.4%)	
other ^{††}	17 (5.6%)	5 (2.0%)	
Response to platinum-based CTx			0.96
Complete response	239 (78.1%)	195 (78.6%)	
Partial response	67 (21.9%)	53 (21.4%)	
BRCA status ^{†††}			< 0.001
Mutated	44 (15.1%)	100 (40.3%)	
Wild type	247 (84.9%)	148 (59.7%)	

Patients in the niraparib group were

- younger (median age 56 vs. 59 years, $p = 0.01$),
- had a higher proportion of serous histology (92.7% vs. 86.3%, $p = 0.009$),
- were more likely to receive neoadjuvant chemotherapy (43.1% vs. 32.4%, $p = 0.012$),
- and had a higher prevalence of BRCA mutations (40.3% vs. 15.1%, $p < 0.001$).

Values are mean ± standard deviation or number (%).

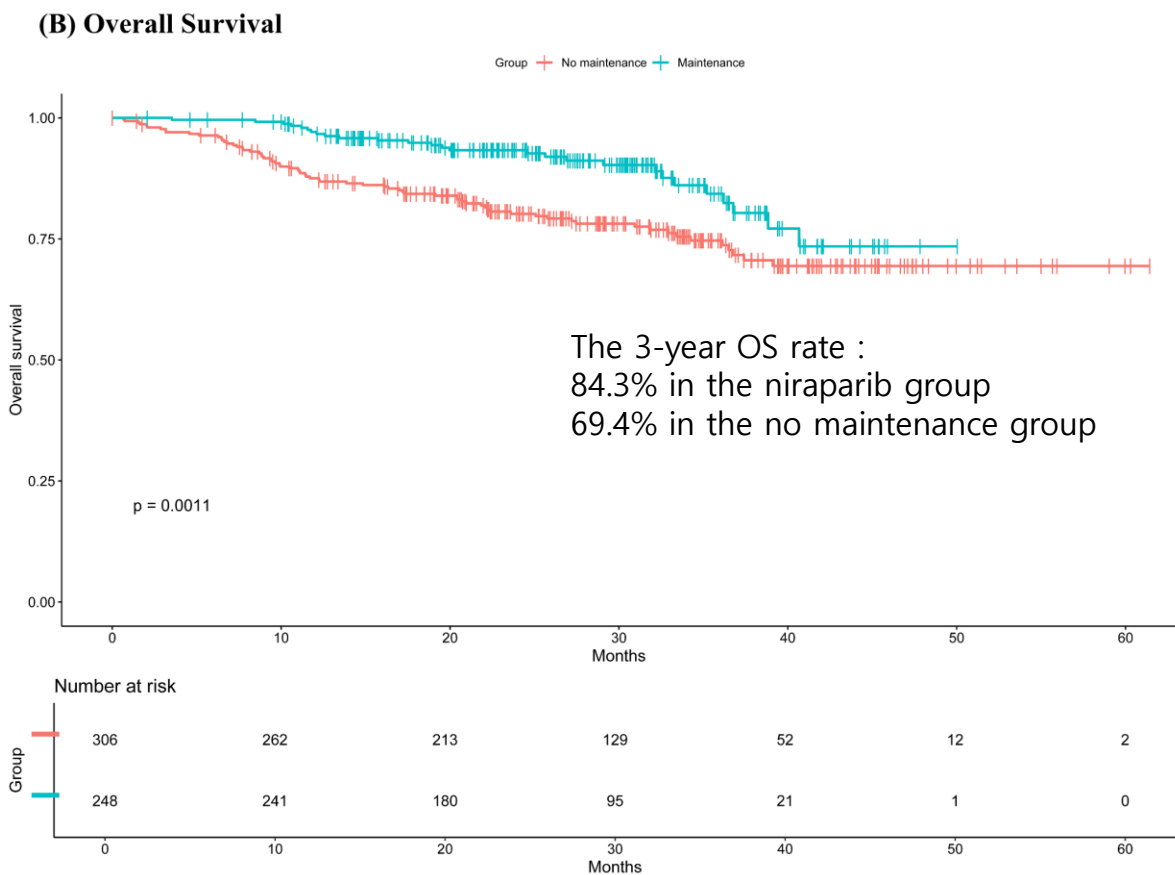
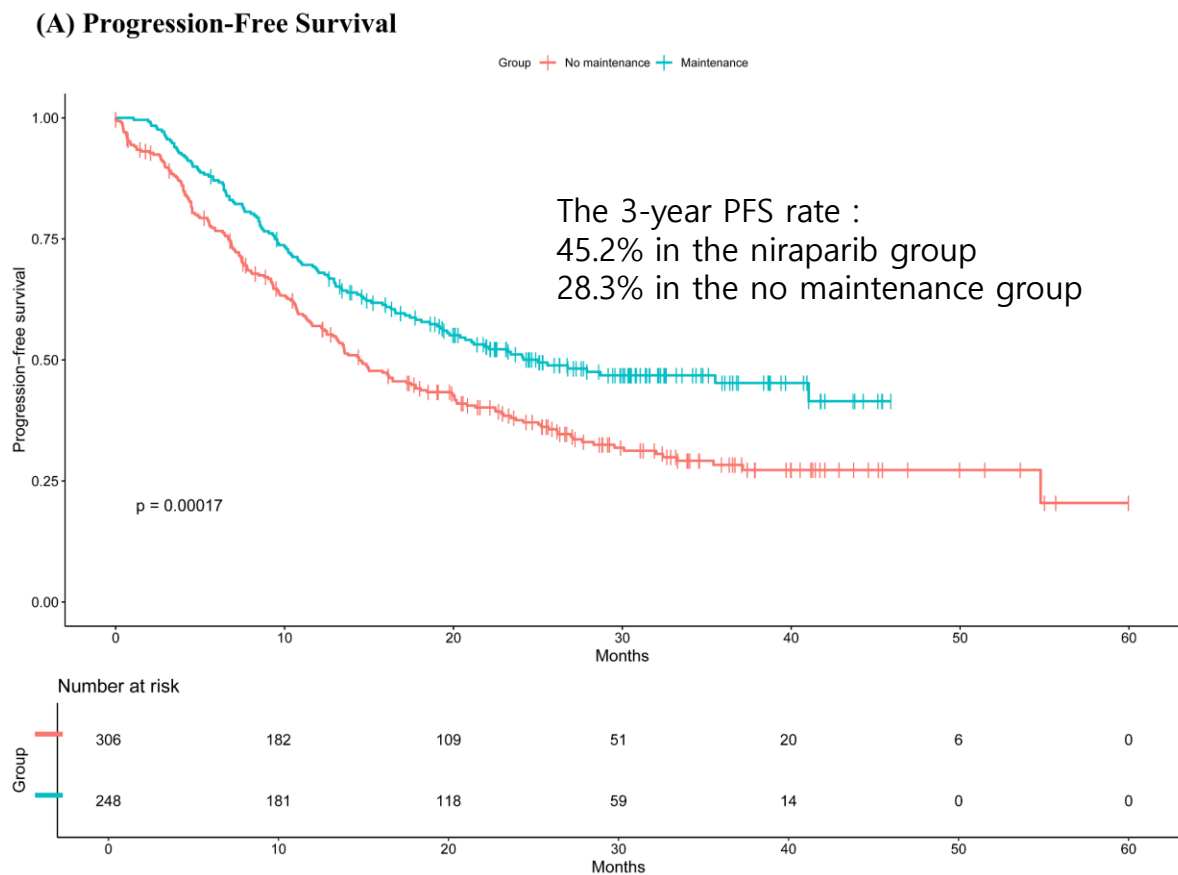
BMI, body mass index; CA-125, cancer antigen 125; CTx, chemotherapy;

[†] Others: Poorly differentiated squamous cell carcinoma, ovarian origin

^{††} Others includes 3, 4, 5, 13, and 15 cycles of platinum-based chemotherapy.

^{†††} BRCA testing was not performed in 15 patients in the no adjuvant group.

Unmatched Overall Cohort : PFS & OS



The median duration of follow-up : 26.6 months, 26.3 months, and 26.6 months for all patients, niraparib maintenance group, and no maintenance group

Matched Cohort : Baseline Characteristics

Characteristics	No maintenance (n = 189)	Niraparib (n =189)	P
Age			
median (range)	57 (35–81)	56 (35–81)	0.58
Histology			0.13
Serous	168 (88.9%)	175 (92.6%)	
Endometrioid	9 (4.8%)	8 (4.2%)	
Clear cell	9 (4.8%)	6 (3.1%)	
Mixed	3 (1.6%)	0 (0.0%)	
Stage			0.085
Stage III	122 (64.6%)	104 (55.0%)	
A	20 (10.6%)	9 (4.8%)	
B	12 (6.3%)	10 (5.2%)	
C	90 (47.6%)	85 (45.0%)	
Stage IV	67 (35.4%)	85 (45.0%)	
Reciept of neoadjuvant chemotherapy			0.53
No	118 (62.4%)	111 (58.7%)	
Yes	71 (37.6%)	78 (41.3%)	
Outcomes of cytoreductive surgery (n,%)			
Primary debulking surgery			0.12
Complete	89 (75.4%)	72 (64.98%)	
Optimal (Residual < 1cm)	17 (14.4%)	28 (25.2%)	
Suboptimal (Residual ≥ 1cm)	12 (10.2%)	11 (9.9%)	
Interval debulking surgery			0.49
Complete	47 (66.2%)	55 (70.5%)	
Optimal (Residual < 1cm)	18 (25.4%)	20 (25.6%)	
Suboptimal (Residual ≥ 1cm)	6 (8.5%)	3 (3.8%)	
No. of cycles of platinum-based CTx			0.32
6	144 (76.2%)	136 (72.0%)	
7-9	40 (21.2%)	48 (25.4%)	
10-12	5 (2.6%)	3 (1.6%)	
otherst	0 (0.0%)	2 (1.1%)	
Response to platinum-based CTx			0.80
Complete response	147 (77.8%)	150 (79.3%)	
Partial response	42 (22.2%)	39 (20.6%)	
BRCA status			0.08
Mutated	42 (22.2%)	58 (30.7%)	
Wild type	147 (77.7%)	131 (69.3%)	

To address baseline imbalances between treatment groups, propensity score matching was performed using age at diagnosis, receipt of neoadjuvant chemotherapy, and BRCA mutation status as matching variables.

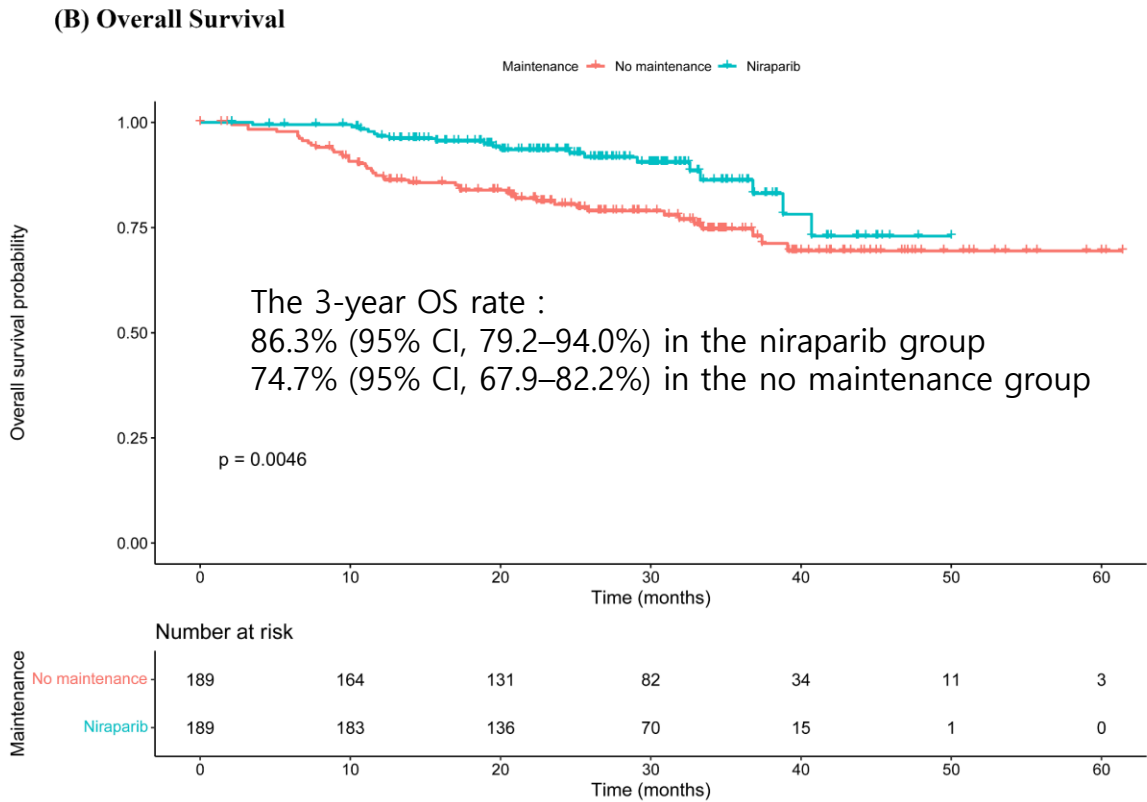
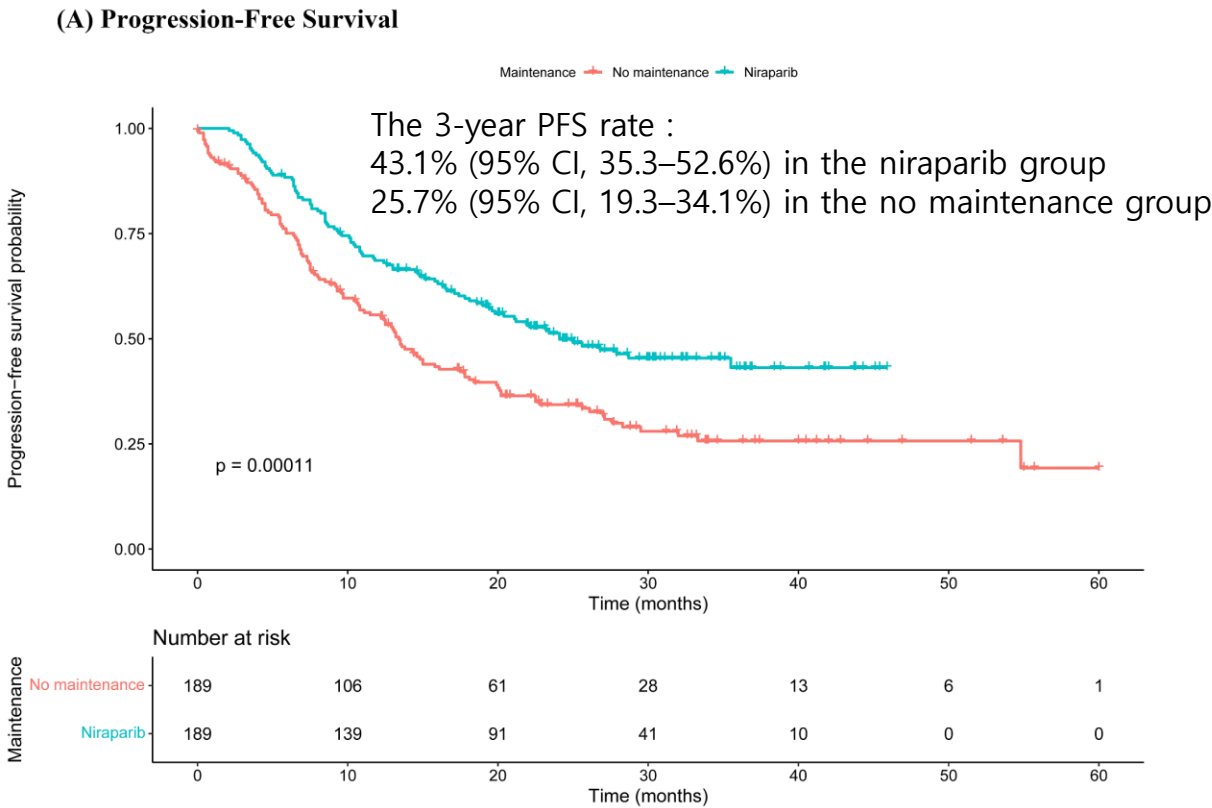
A caliper width of 0.4 was selected based on preliminary matching assessments.

Values are mean ± standard deviation or number (%).
BMI, body mass index; CA-125, cancer antigen 125; CTx, chemotherapy;
†Others includes 5, and 13 cycles of platinum-based chemotherapy.

Matched Cohort : BRCA Mutation Status

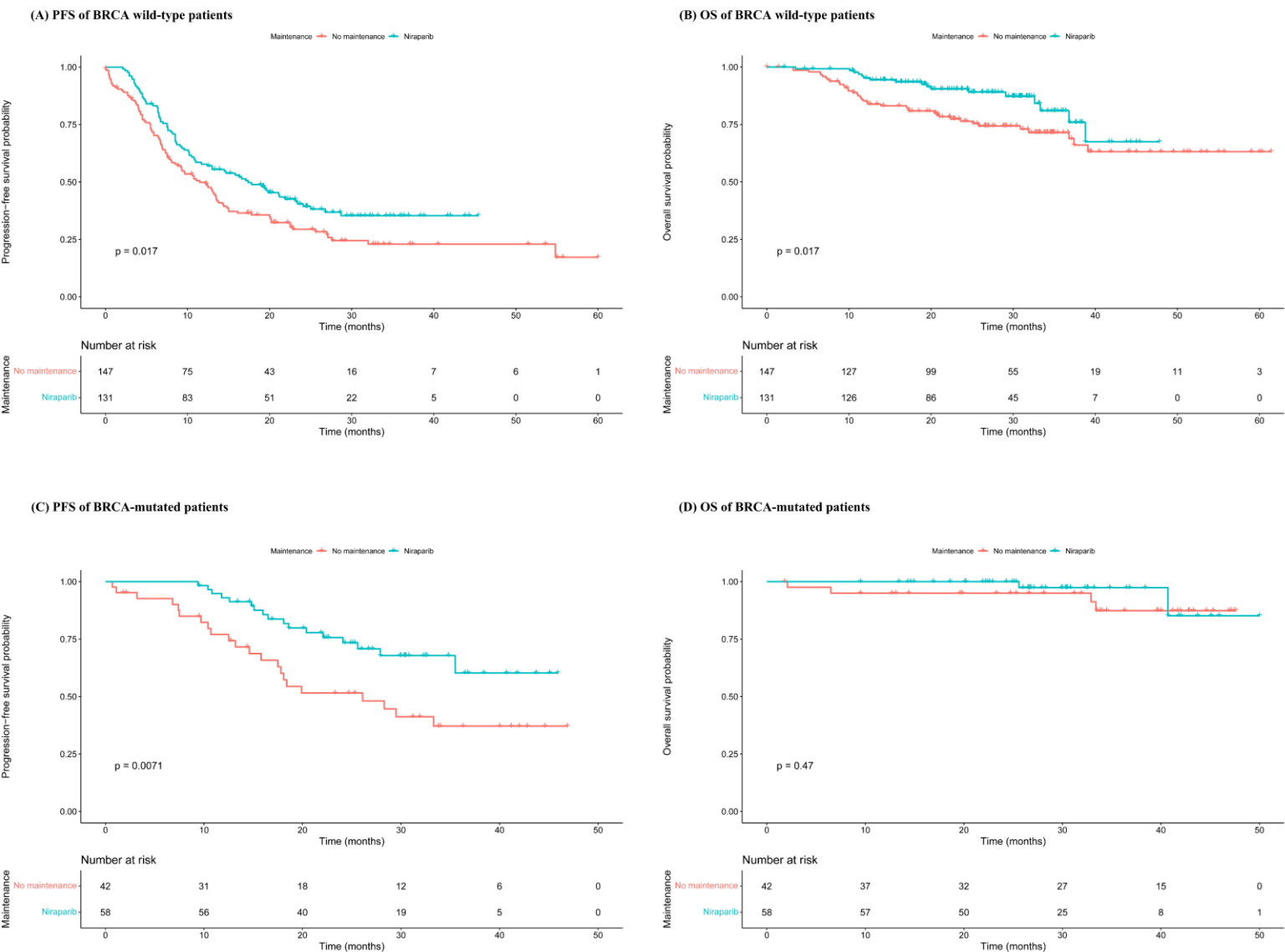
Characteristics	No maintenance (n =189)	Niraparib (n =189)
No. of patients who underwent BRCA test (%)		
Germline BRCA	79 (41.8%)	58 (30.7%)
Somatic BRCA	3 (5.9%)	22 (11.6%)
Germline & Somatic BRCA	107 (56.6%)	109 (57.7%)
BRCA status (n%)		
BRCA wildtype	147 (77.7%)	131 (69.3%)
BRCA1 mutation	30 (15.9%)	27 (14.3%)
BRCA2 mutation	11 (5.8%)	31 (16.4%)
BRCA1&2 mutation	1 (0.5%)	0 (0.0%)

Matched Cohort : PFS & OS



The median duration of follow-up : 26.5 months, 26.3 months, and 26.6 months for all patients, niraparib maintenance group, and no maintenance group

Matched Cohort : PFS & OS according to BRCAm status



Conclusion in Cohort A & B

- This real-world study supports the clinical effectiveness of first-line niraparib maintenance therapy in Korean women with advanced epithelial ovarian cancer.
- Niraparib was associated with prolonged progression-free survival compared with no maintenance therapy, with consistent benefit observed in both BRCA-mutated and BRCA wild-type patients.
- An overall survival benefit was also observed in the matched overall population and was particularly evident among patients with BRCA wild-type tumors with minimal crossover to post-progression PARPi.



CASES REVIEW

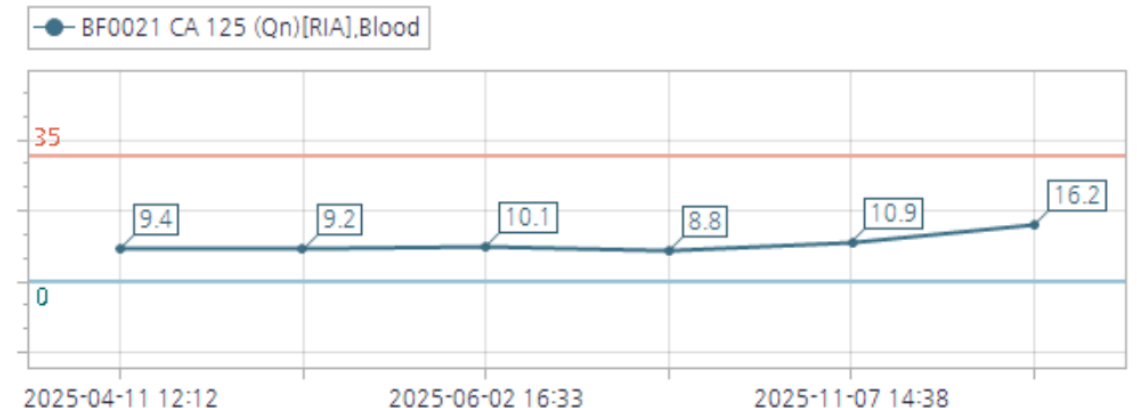
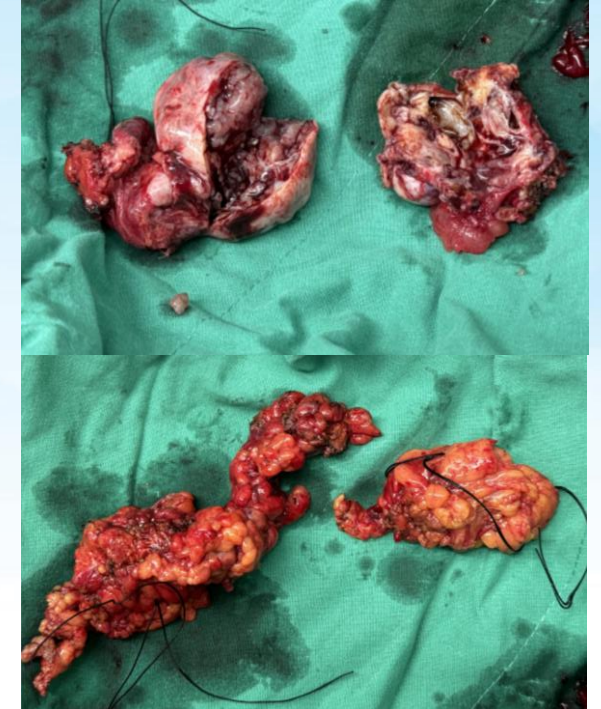
CASE I, high risk HRD +

- F/56, Ov cancer, HGSC Stage IIIC
<<Steroid allergy : 근이완제 사용불가>>
- 2024' NAC Paclitaxel/Carbo #3
- 2024.9 : IDS → not R0
- 2024.11 : Paclitaxel/Carbo #3
- CA125 : 13, AP-CT : PR
 - tissue **BRCA^{wild}**, **HRD(GIS 45)**
 - Niraparib start

<< 1Y 6Mo >> stable status

2026.3 : peritoneal recurrence

→ OP X, 2nd T/C/bev #5



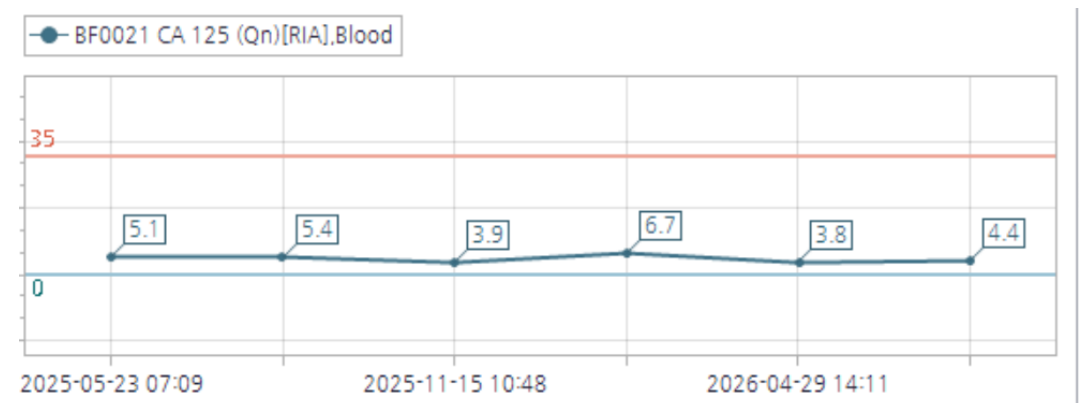
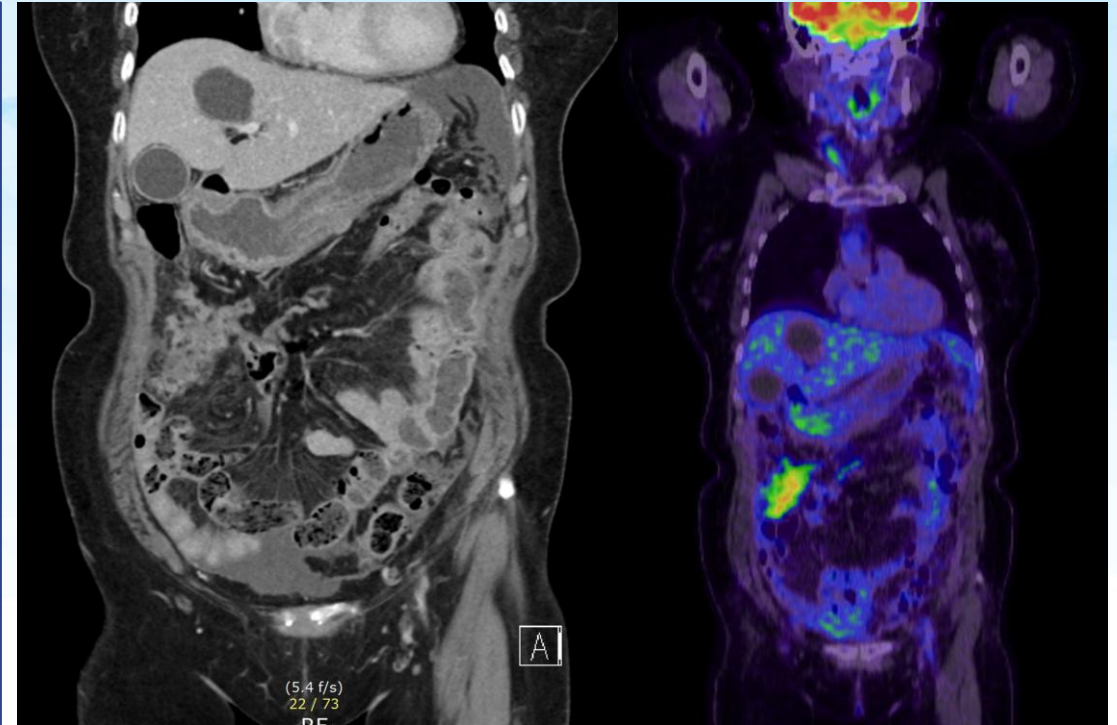
CASE II, high risk *BRCAm*/HRD +

- F/72, PPSC, HGSC Stage IIIC
- 2024' NAC Paclitaxel/Carbo #3
- 2024.8 : IDS with GS CO-OP (Rt. Hemi-colectomy) : PCI 16 → R0
- 2024.11 : Paclitaxel/Carbo #3
- CA125 : 8, AP-CT : CR

→ tissue ***BRCAmut***, HRD(GIS 74)

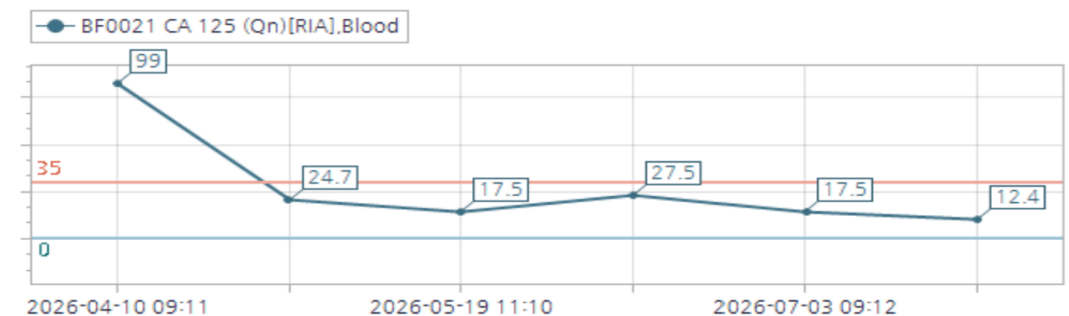
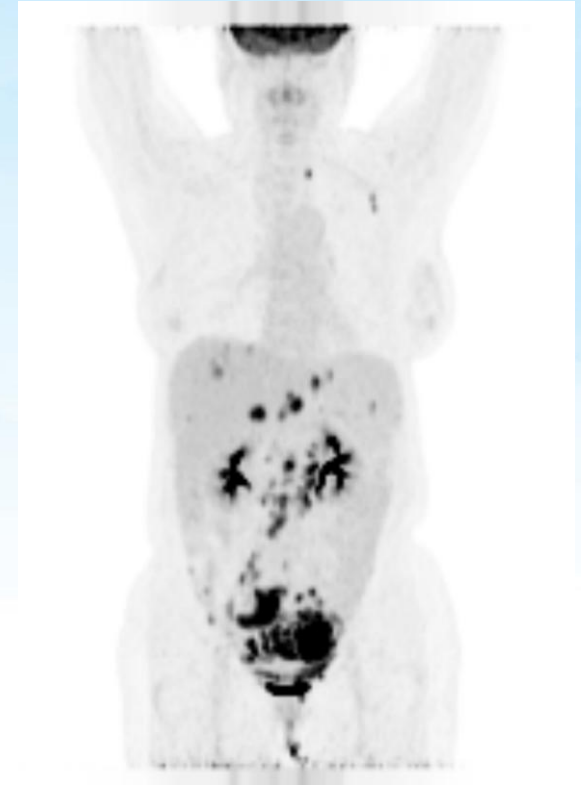
→ Niraparib start

NED until now <<1Y 8Mo>>



CASE III, high risk *BRCA* -/HRD +

- F/52, OV CA, HGSC Stage IVB
Lt SCLN, cardiphrenic LN +
 - 2026.3 : NAC Paclitaxel/Carbo #3
 - 2026.5 : IDS → R1
 - 2026.7 : Paclitaxel/Carbo #3
 - CA125 : 12, AP-CT : PR
- g*BRCA* -/-, HRD +, HER2 3+
- PRIMA VS PAOLA1
- maintenance niraparib 예정



CASE IV, high risk HRP

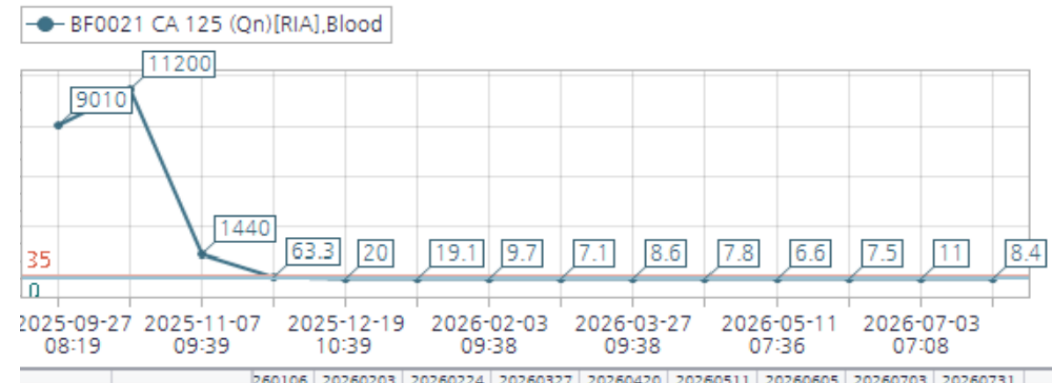
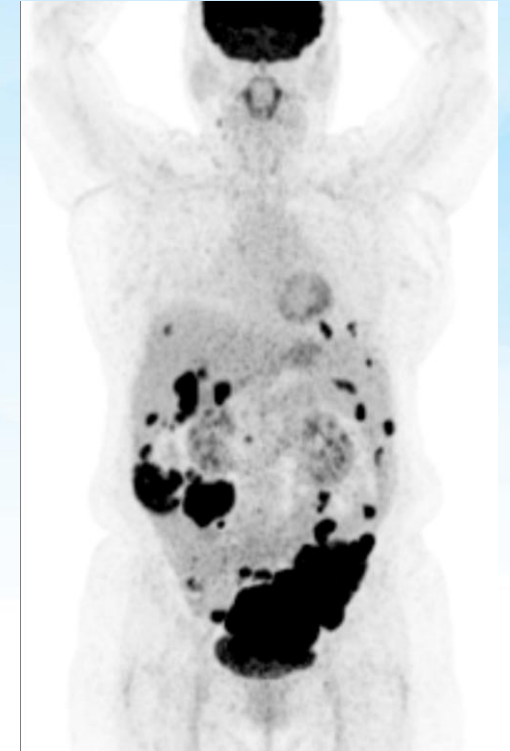
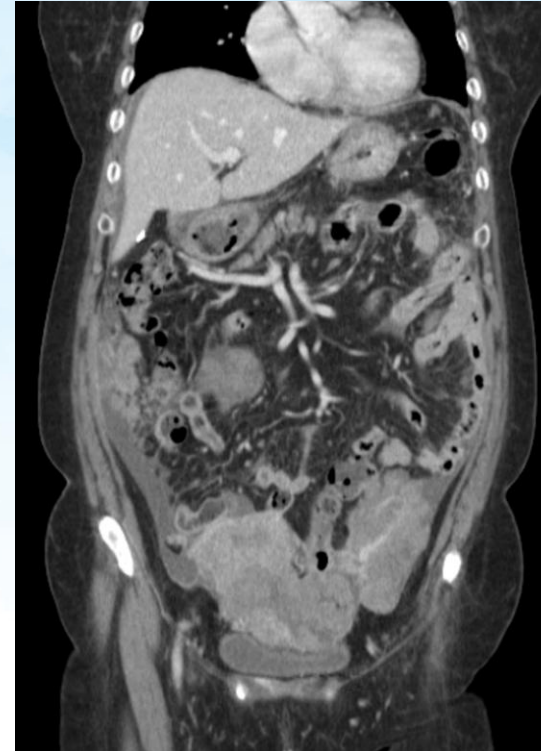
- F/68, Tubal CA, HGSC, Stage IIIC
- 2025.10 : NAC Paclitaxel/Carbo #3
- 2025.12 : IDS with LAR (GS CO-OP)
→ R0
- 2026.3 : Paclitaxel/Carbo #3
- CA125 : 7, AP-CT : CR

Results:

- HRD (상동재조합결핍): 음성 (score: 41)
- BRCA 변이: 음성 (25-11-18)

→ gBRCA -/-, **HRD – (GIS 41)**

→ maintenance niraparib 진행



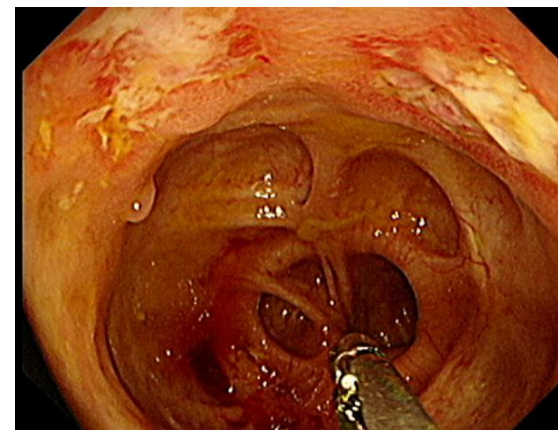
CASE V, Low grade serous, HRD +

- F/58, Ovary CA, Low grade serous, Stage IIIC
- Intestinal TBc medication
- 2025.12 : PDS with LAR (GS CO-OP) → R0
- 2026.4 : Paclitaxel/Carbo #6
- CA125 : 7, AP-CT : CR

➔ Initial plan : maintenance hormone therapy (aromatase inhibitor)

Tissue BRCA -/- **HRD + (GIS 52)** MMRp
HER2 2+

➔ maintenance niraparib start





Advantages of ZEJULA[®] (niraparib)

ZEJULA®는 바이오마커에 상관 없이 모든 난소암 환자에서 사용이 가능하며,
난소암 1차 단독 유지요법으로 유일하게 **BRCAm, HRd/BRCAwT** 환자 모두에서 급여가 가능한 PARP 억제제입니다.†

↳ 제줄라® 투여 가능 환자^{1,2}

	HRd		HRp
	BRCAm	BRCAwT	BRCAwT
1차 단독 유지요법 (백금기반요법에 반응)			
2차 이상 단독 유지요법 (백금기반요법에 반응)			

보험급여 대상 환자 국내 허가받은 적응증

† As of Apr 2026
1. 제줄라® 정 국내 허가사항. <https://nedrug.mfds.go.kr/pbp/CCBBB01/getItemDetailCache?cacheSeq=202401351aupdateTs2026-02-13%2011:32:57.0b> Accessed in Apr 2026 2. 건강보험심사평가원 공고 제2024-129호(시행일: 2024년 10월 1일)

ZEJULA®는 바이오마커에 상관 없이 모든 난소암 환자에서 사용이 가능하며,
난소암 1차 단독 유지요법으로 유일하게 **BRCAm, HRd/BRCAwt 환자 모두에서 급여가 가능**한 PARP 억제제입니다.†

↳ 국내 허가된 PARP 억제제 1차 치료 시 급여조건 비교^{1,2}

항암요법	제줄라®	A
투여대상	1차 백금기반요법에 반응(CR 또는 PR)한 진행성 상동재조합결핍 양성(BRCA 변이 또는 유전체 불안정성) 상피성 난소암, 난관암, 일차 복막암 # 유지요법 시행 직전 투여된 백금기반요법은 bevacizumab 포함 요법을 제외하며, 이전에 PARP 억제제를 투여받은 적이 없어야 함.	1차 백금기반요법에 반응(CR 또는 PR)한 진행성 BRCA 변이 고도 상피성 난소암, 난관암, 일차 복막암 # 유지요법 시행 직전 투여된 백금기반요법은 bevacizumab 포함 요법을 제외하며, 이전에 PARP 억제제를 투여받은 적이 없어야 함.
투약기간	백금계 항암제 완료 후 12주 이내 투여	백금계 항암제 완료 후 8주 이내 투여
급여 인정 기간	제한 없음	최초 투여 후 2년까지

† As of Apr 2026
1. 제줄라® 정 국내 허가사항. <https://nedrug.mfds.go.kr/pbp/CCBBB01/getItemDetailCache?cacheSeq=202401351aupdateTs2026-02-13%2011:32:57.0b> Accessed in Apr 2026
2. 건강보험심사평가원 공고 제2024-129호(시행일: 2024년 10월 1일)

Thank you for your attention



▲제줄라캡슐 100mg



▲제줄라정 100mg

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