Factors Affecting PARP Inhibitor Use as Maintenance Treatment in Platinum-Sensitive Recurrent Ovarian Cancer

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Background

- Ovarian cancer (OC) is the leading cause of death in gynecological cancers
  - Approximately 85% of women with advanced OC will experience recurrence, and 30% will die within 5 years of diagnosis[1,2]
- Poly(ADP-ribose) polymerase inhibitors (PARPi) have demonstrated efficacy in OC
- Since 2014, several PARPi have been approved in the third- or fourth-line treatment setting and in the maintenance treatment setting in both patients with OC undergoing frontline treatment and in patients with platinum-sensitive recurrent OC (PSROC)
  - Niraparib has been shown to prolong progression-free survival in patients with OC after first- and second-line treatment regardless of biomarker status and while preserving quality of life[3]
  - Olaparib was first approved in December 2014 and was followed by rucaparib and niraparib by March 2017[4–6]
- However, factors affecting PARPi use in the maintenance setting and potential population-specific disparities in PARPi use are unknown

Conclusions

- In this real-world study, *BRCA*m status and younger age were associated with greater PARPi use in the PSROC maintenance setting
- No other patient characteristic or demographic included in the analysis showed a statistically significant association with disparities in the use of PARPi maintenance
- Low prevalence of PARPi maintenance therapy in PSROC highlights the urgent need to improve awareness and increase use across all patient groups

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Objectives

- This study aimed to explore patient characteristics and demographics that may influence the use of PARPi maintenance treatment in PSROC

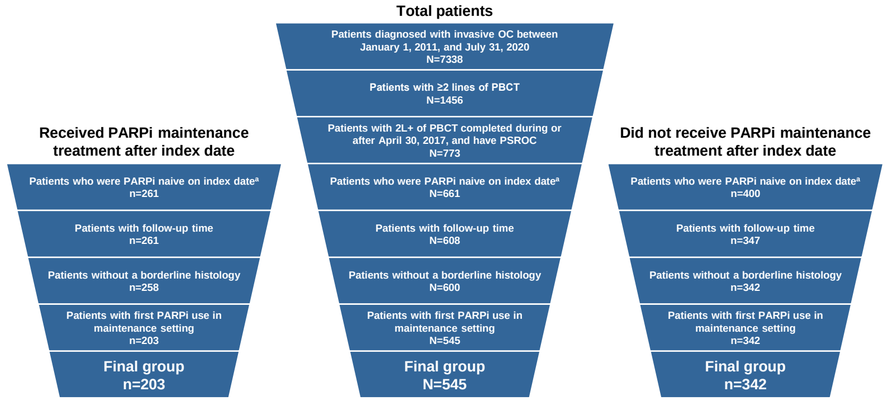
Methods

- This retrospective, real-world study used the Flatiron Health database, a longitudinal electronic health record–derived database consisting of de-identified patient-level data that is curated via technology-enabled abstraction from approximately 280 cancer clinics (≈800 sites of care) representing patients with cancer in the US nationwide[7]
- Patients were included if they met the following criteria: diagnosed with invasive ovarian, fallopian tube, and/or primary peritoneal cancer, collectively referred to as OC, from January 1, 2011, to July 31, 2020; received ≥2 lines of platinum-based chemotherapy (PBCT); completed subsequent PBCT on or after April 30, 2017; were platinum sensitive (≥6 months from last platinum in prior PBCT to start of subsequent PBCT); and were PARPi naive at index date
  - The index date was defined as the day after the last platinum administration
- PARPi use in the PSROC maintenance setting was compared using a chi-square test or *t* test across several factors
  - *BRCA* mutation (*BRCA*m) status
  - Age at index date
  - Race
  - Practice setting
  - Geographic location

Results

- 545 patients met the inclusion criteria (Figure 1)
  - 203 (37%) received PARPi maintenance therapy
  - 342 (63%) did not receive PARPi maintenance therapy

Figure 1. Study Attrition



[a]Index date was defined as the day after the last platinum administration in the subsequent PBCT.
2L, second line.

- The majority of patients (88%) originated from community practices (Figure 2)
- More patients had *BRCA* wild type (*BRCA*wt; 66%) than *BRCA*m (15%)
- A greater percentage of patients were ≥65 years of age than were <65 years of age (61% vs 39%)
- Patients in both groups had, on average, approximately 2.9 years of follow-up measured from OC diagnosis to index date, with a median of ≈2.5 years (data not shown)

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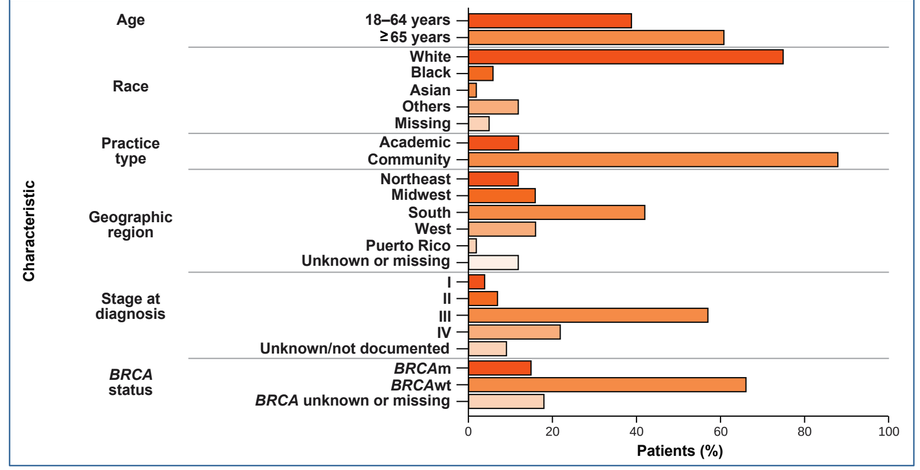
Results *(cont'd)*

Figure 2. Patient Demographics and Baseline Characteristics



- Patients with a *BRCA*m were more likely to be treated with a PARPi in the maintenance setting than patients who were *BRCA*wt ($P<0.0001$) (Table 1)
- Patients <65 years of age were more likely to be treated with a PARPi than patients who were ≥65 years of age ($P=0.006$)
- No statistically significant differences in PARPi use were found by race, geographic region, or practice type

Table 1. PARPi Use in Study Patients

Parameter, n (%)	All patients N=545	Received PARPi maintenance treatment n=203	Did not receive PARPi maintenance treatment n=342	*P* value
Age, years				
<65	212 (100)	94 (44)	118 (56)	0.006
≥65	333 (100)	109 (33)	224 (67)	
Race				
White	411 (100)	148 (36)	263 (64)	0.231
Black	34 (100)	18 (53)	16 (47)	
Asian	9 (100)	5 (56)	4 (44)	
Other	63 (100)	21 (33)	42 (67)	
Unknown	28 (100)	11 (39)	17 (61)	
Practice type				
Academic	63 (100)	22 (35)	41 (65)	0.685
Community	482 (100)	181 (38)	301 (62)	
Geographic region[a]				
Northeast	65 (100)	26 (40)	39 (60)	0.985
Midwest	86 (100)	32 (37)	54 (63)	
South	230 (100)	86 (37)	144 (63)	
West	85 (100)	32 (38)	53 (62)	
Puerto Rico	13 (100)	5 (38)	8 (62)	
Unknown	66 (100)	22 (33)	44 (67)	
BRCA status				
*BRCA*m	84 (100)	53 (63)	31 (37)	<0.0001
*BRCA*wt	361 (100)	119 (33)	242 (67)	
BRCA unknown	100 (100)	31 (31)	69 (69)	

[a]Flatiron Health groups patients from academic practices into the unknown geographic region.

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Conflicts of Interest

Dr. Valentine has nothing to disclose.
Ms. Perhanidis and **Dr. Hawkes** are employees of GlaxoSmithKline.
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