PARPi therapy improves overall survival of patients with recurrent high-grade ovarian cancer: the Australian data

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INTRODUCTION

Ovarian cancer is the most lethal gynaecological malignancy worldwide with 5-year survival rates lower than 50%.

Most women are diagnosed with advanced disease and experience recurrence after primary treatment.

Poly-ADP ribose polymerase inhibitors (PARPi) act on DNA repair mechanisms. This targeted intervention may have a rapid and profound impact on the disease course. However, there is limited data in Australia.

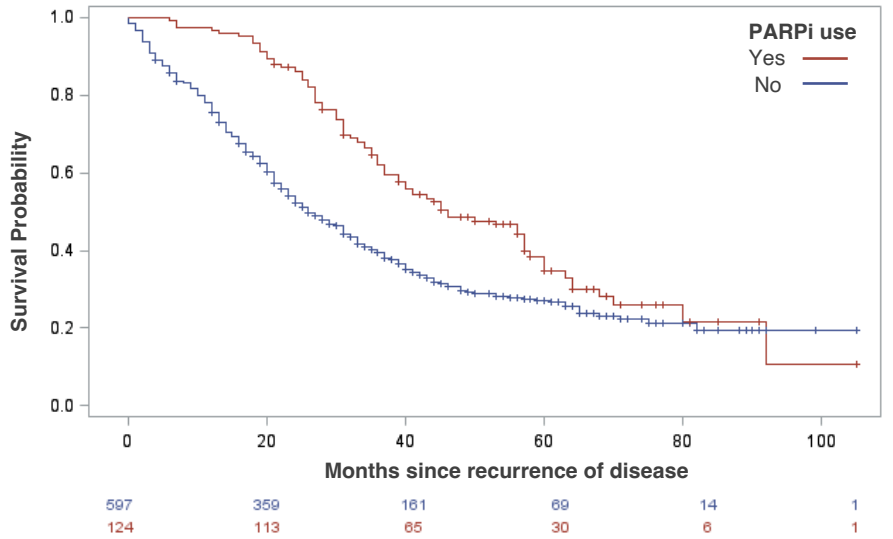
AIMS & METHODS

To assess the impact of PARPi on the overall survival of patients with recurrent ovarian cancer

Prospective national multi-centre study between 2012 to 2020:

- 598 Australian women with recurrence of invasive, non-mucinous ovarian cancer
- Patient demographics, tumour characteristics and cancer treatments were obtained from medical records, PBS and MBS data
- Survival analyses by Kaplan-Meier and time-dependent covariate Cox proportional-hazards regression models using SAS 9.4

RESULTS



Kaplan-Meier plot shows improved overall survival after recurrence of disease following PARPi use compared to non-PARPi treatment (hazard ratio = 0.77; 95% CI = 0.60-0.99; P = 0.04) after correcting for age, type and stage of ovarian cancer.

	Total (n=598)	No PARPi (n=474)	PARPi (n=124)	P value
Age at index, years				
Mean (SD)	61 (10.3)	62 (10.1)	59 (10.5)	0.004
Tumour site, n (%)				0.52
Ovary	436 (72.9)	348 (73.4)	88 (71.0)	
Peritoneum	72 (12.0)	58 (12.2)	14 (11.3)	
Fallopian tube	61 (10.2)	44 (9.3)	17 (13.7)	
FIGO stage, n (%)				0.51
3	441 (73.1)	344 (72.6)	97 (78.2)	
4	111 (18.6)	93 (19.6)	18 (14.5)	
BRCA status, n (%)				<0.001
Deleterious	84 (14.0)	16 (3.4)	68 (54.8)	
Wildtype	427 (71.4)	382 (80.6)	45 (36.3)	

DISCUSSION

This is the first Australian study to examine the use of PARPi in the management of patients with recurrent ovarian cancer.

Key findings

- 20.7% of all patients in the study received PARPi therapy
- PARPi use is associated with improved overall survival of patients compared to non-PARPi treatments
- Improved short-term survival within the first 24 months of PARPi use in patients with *BRCA* mutations (germline or somatic)

Future direction

- Assess improvements in patient-reported disease symptoms and functional outcome measures after first use of PARPi therapy

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