**Poster 35: Trends in estimated percent of patients with epithelial ovarian cancer eligible for and responding to PARP inhibitors over time**

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Topic: Ovarian

Objectives
We seek to estimate the annual percentage of patients with advanced-stage epithelial ovarian cancer in the United States who are eligible for and will derive benefit from PARP inhibitor therapy based on US FDA-approved indications. We will compare the rates of eligibility and expected benefit, then analyze these trends over time.

Methods
This is a retrospective cross-sectional study using publicly available data. Published reports are used to capture demographic and tumor molecular characteristics of patients with advanced epithelial ovarian cancer. FDA approvals are used to estimate the annual percentage of patients eligible for PARP inhibitor treatment from 2014 to 2023 and clinical trial data is used to estimate treatment benefit. We model the percentage of patients eligible for treatment that derive clinical benefit from PARP inhibitors by year and analyze this trend against evolving FDA approved indications. PARP inhibitors including olaparib, niraparib, and rucaparib are analyzed in aggregate. Separate analyses are conducted based on biomarker status (BRCA and homologous recombination proficiency).

Results
PARP inhibitors were approved for 7 different indications in epithelial ovarian cancer between 2014 and 2021; this reduced to 4 indications by December 2022. The estimated percent of patients eligible for a PARP inhibitor increased from 2.0% in 2014 to a maximum of 93.4% in 2021. The maximum percent of patients with 2-year progression free survival (PFS) benefit was 22.0% in 2021 and 15.2% in 2023. In 2023, 35.6% of the BRCA-mutated population, 25.4% of the homologous recombination deficient (HRd) BRCA wild-type population, and 7.9% of homologous recombination proficient (HRp) population had benefit in terms of 2-year PFS. In 2023, there was a 13% decrease in HRd patients eligible for a PARP inhibitor and no change in percent of HRp patients eligible. There was no change in the overall percent of patients eligible for treatment without benefit from 2021 to 2023 (71.4% vs 72.2%).

Conclusions
PARP inhibitor eligibility is increasing at a faster rate than benefit. The greatest difference in eligibility and benefit is seen in the HRp population. The percent of patients deriving 2-year PFS benefit decreased following recent FDA withdrawals, while the population eligible for treatment that do not derive benefit has remained stable.

Abstract Table or Graph
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