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**BRAIN METASTASES IN PATIENTS WITH ADVANCED BRCA-ASSOCIATED OVARIAN CANCER RECEIVING SYSTEMIC TREATMENT AND ADJUVANT MAINTENANCE OLAPARIB THERAPY ACCORDING TO THE CRITERIA OF STUDY 19 CLINICAL TRIAL – SINGLE-CENTRE EXPERIENCE**

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**Introduction/Background**

Inhibition of poly(ADP-ribose) polymerase (iPARP) proteins as a therapy for advanced ovarian cancer has improved patients’ prognosis, prolonging median progression-free survival (PFS) and time to first subsequent therapy (TFST), particularly in BRCA-associated cases.

The incidence of brain metastases (BM) from advanced ovarian cancer is low, ranging from 1–2.5%, and median survival from BM diagnosis ranges from 2.3–7.1 months.

**Methodology**

5 patients with advanced high-grade ovarian cancer managed at the Maria Skłodowska-Curie Institute in Gliwice (MSCI) between 2018 and 2022 with olaparib-based therapy based on STUDY-19 clinical trial criteria developed brain metastases.

**Results**

The mean age at initial diagnosis was 48.9±10.8 years. 3 patients underwent radical cytoreduction and 2 – suboptimal cytoreduction. The cancer stage at diagnosis in all cases was identified as IIIC according to FIGO (International Federation of Gynaecology and Obstetrics). All the patients received chemotherapy. 2 of the patients were treated with bevacizumab as their first line of therapy. Prior to receiving iPARP-based therapy, the patients were treated with 2 or 3 lines of platinum-based therapies.

Somatic versus germline BRCA1/2 mutations were identified in 3 versus 2 patients respectively. In 2 patients BM were identified prior to iPARP-based therapy, in 1 patient during treatment, and in 3 patients after its completion. 2 patients underwent surgery followed by stereotactic radiotherapy, while 2 patients were managed with stand-alone palliative brain radiation therapy. 3 patients were offered another line of treatment due to simultaneous metastases to parenchymal organs.

**Conclusion**

Based on our experience, we regard BM an adverse prognostic factor. Despite surgical treatment, chemotherapy and maintenance iPARP-based therapies prolonging OS, the patients’ prognosis remains poor.

**Disclosures**

The mean OS for our patients was 5.8±1.6 years, OS, the patients underwent SCS, our institution, after maintenance therapy either with bevacizumab (B-SCS) or PARPi (P-SCS), from January 2015 to January 2023. All patients underwent pre-operative PET-CT scan and diagnostic laparoscopy before SCS. Disease distribution were classified according to pre-operative radiological data.

**Results**

Overall, 114 cases were identified (84 B-SCS and 30 P-SCS), and complete gross resection (CGR) was achieved in 106 (93%) patients.

P-SCS patients presented more frequently with a BRCA mutation (p=0.04) and received more neoadjuvant chemotherapy in the first-line setting (p=0.02). At disease recurrence, patients treated with PARPi were more likely to have a single-site or oligometastatic disease compared to the B-SCS group (p=0.012).

At the time of SCS, both groups had similar proportions of CGR (p=0.08); due to extent of disease, P-SCS were more keen to undergo minimally-invasive approach (MIS), compared with B-SCS (33.3% versus 19.0%, p=0.11) with lower surgical complexity (60.7% versus 70%, p=0.363), albeit not statistically relevant. There was no difference in post-operative complications (p=0.511).

Conclusion/Background

Bevacizumab and PARP-inhibitors (PARPi) showed a survival benefit in first-line settings. Nevertheless, there is still poor knowledge about the consequences of these medications on disease presentation at recurrence and, consequently, on secondary cytoreductive surgery (SCS). This study aims to assess the feasibility of SCS in patients receiving different first-line maintenance regimens.

**Methodology**

We retrospectively identified all platinum-sensitive recurrent epithelial ovarian cancer patients who underwent SCS, at our institution, after maintenance therapy either with bevacizumab (B-SCS) or PARPi (P-SCS), from January 2015 to January 2023. All patients underwent pre-operative PET-CT scan and diagnostic laparoscopy before SCS. Disease distribution were classified according to pre-operative radiological data.

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Conclusion First-line PARPi administration appears to affect patterns of recurrence, with a higher chance of observing a single or oligometastatic recurrence. SCS in PARPi previously treated populations is feasible and safe, with similar peri-operative outcomes, compared to the Bevacizumab group.

**Disclosures**

None

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**THE IMPACT OF PREVIOUS MAINTENANCE THERAPY ON DISEASE PRESENTATION AND SECONDARY CYTOREDUCTIVE PERIOPERATIVE OUTCOMES IN PLATINUM SENSITIVE OVARIAN CANCER RECURRENT PATIENTS**

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None