patients. We sought to determine if participation in any clinical trial is associated with a survival benefit in patients with newly diagnosed advanced-stage ovarian cancer.

**Methods**

We retrospectively investigated the patients who treated for newly diagnosed advanced-stage ovarian cancer at Yonsei Cancer Hospital between 2019 and 2021. This study included 202 patients with stage III-IV, 82 patients who participated in clinical trials and 120 participants receiving standard-of-care therapy (SOC).

**Results**

The median follow-up duration was 31.5 months. Disease recurrence occurred in 123 (60.9%) patients and 45 (22.3%) patients died. Among the patients in both groups, there were no significant differences in age, histologic type, stage, median CA-125 level, comorbidities, and BRCA 1/2 status. There were also no differences in the incorporation of hyperthermic intraperitoneal chemotherapy, neoadjuvant chemotherapy, residual disease after cytoreductive surgery. The patients involved in clinical trials were associated with significantly improvement in progression-free survival (PFS) (31.4 vs. 19.2 months; HR, 0.67; 95% CI, 0.46 to 0.97; p = 0.034) compared to SOC. There was no difference in overall survival between two groups (P = 0.164).

**Conclusion/Implications**

Clinical trial participation was associated with improved PFS in patients with newly diagnosed advanced-stage ovarian cancer. Clinical trial participation is considered to be beneficial to patients with newly diagnosed advanced-stage ovarian cancer.

**EP274/#837**

**CHARACTERIZATION OF A THREE-DIMENSIONAL CULTURE SYSTEM REPRESENTATIVE OF DISEASE PROGRESSION IN HIGH-GRADE SEROUS OVARIAN CANCER**

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**Introduction**

PEO1, PEO4 and PEO6 are cell lines derived from a single patient with high-grade serous ovarian cancer, the most common disease subtype, which illustrate disease progression. In cell culture-treated flat-bottom flasks, PEO1 and PEO4 form two-dimensional cellular aggregates and PEO6 form three-dimensional structures. This project aims to determine if differences in morphology, viability, proliferation, and metabolic activity exist between the three cell lines when grown in an ultra-low attachment plate more representative of in-vivo conditions.

**Methods**

PEO1, PEO4 and PEO6 cells were grown in ultra-low attachment plates. Live/dead cell imaging, apoptosis and proliferation detection as well as ATP quantitation assays were performed using microscope imaging, cytometry and spectrophotometry methods.

**Results**

The cell lines were morphologically different, mimicked the multilayered structure of in-vivo tumors and had a similar proliferation pattern. PEO1 displayed the highest aggregation level, PEO6 the highest compaction level, and PEO4 the lowest aggregation and compaction levels. All three cell lines were found to mimic poorly vascularized tumors by forming a multilayered structure with an outer layer of live cells and an inner core of apoptotic cells, but at different times. It was observed that PEO1, PEO4 and PEO6 cells proliferate mostly in the cell masses’ periphery. PEO6 cells produced a higher amount of ATP followed by PEO4 and then PEO1 cells after 4 and 7 days.

**Conclusion/Implications**

Three-dimensional cell culture of established ovarian cancer cell lines in such environment likely will serve as a preclinical model of disease to provide experimental responses to therapeutic agents.

**EP276/#634**

**THE IMPACT OF HISTOLOGIC SUBTYPES ON SURVIVAL OUTCOMES IN PRIMARY MUCINOUS OVARIAN CANCER**

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**Introduction**

Primary mucinous ovarian cancer (PMOC) is a unique and rare subtype of ovarian cancer. In 2014, the World Health Organization introduced a new histologic classification by dividing PMOC into two subtypes: expansive or infiltrative.