ONCOLOGICAL SAFETY OF FERTILITY PRESERVATION TREATMENT IN OVARIAN CANCER

Abstract #312

1Marta Heras*,  2Leticia Azcona,  3Octavio Arecibia,  4Lucas Ming,  5Isa Marti,  6Alicia Hernandez,  7Arantxa Lekuona,  8Isabel Níguez,  9Blanca Gil-Ibañez,  10Berta Diaz-Feijoó,  11Laia Ribot,  12Maria Nieves Cabezas,  13Marta Laranca,  14Mónica Bellón,  15Amira Alkourdi,  16Laura Cárdenas,  17Ana Boldo,  18Joana Amengual,  19Mikel Gorostidi,  20Ignacio Zapardiel,  21Hospital Santa Cristina, Madrid, Spain;  22Hospital Insular Materno Infantil de Canarias, Gran Canaria, Spain;  23IMED Hospitales, Valencia, Spain;  24Hospital Bellvitge, Barcelona, Spain;  25Hospital La Paz, Madrid, Spain;  26Hospital Donostia San Sebastián, San Sebastián, Spain;  27Hospital Virgen de la Arrixaca, Murcia, Spain;  28Hospital 12 de Octubre, Madrid, Spain;  29Hospital Clinic, Barcelona, Spain;  30Hospital Parc Taulí, Sabadell, Spain;  31Hospital Virgen de la Macarena, Sevilla, Spain;  32Hospital Miguel Servet, Zaragoza, Spain;  33Hospital Clínico San Carlos, Madrid, Spain;  34Hospital Virgen de las Nieves, Granada, Spain;  35Hospital Josep Trueta, Girona, Spain;  36Hospital La Plana, Villarreal, Spain;  37Hospital Son Espases, Mallorca, Spain

Objectives To assess the safety of fertility sparing treatments for early-stage ovarian cancer in women younger than 45 years.

Methodology We performed a retrospective multicenter study including women from 18 to 45 years old diagnosed of early-stage (FIGO I-II) ovarian cancer in 55 Spanish hospitals, from January 2010 to December 2019. Benign and borderline tumors were excluded, as well as advanced-stage (FIGO III-IV). All perioperative characteristics and follow-up were collected and analyzed. Standard staging surgery (SSS) was compared to fertility sparing surgery (FSS) in terms of oncofertility outcomes.

Results A total of 630 women were included; 546 (87.6%) were stage I. The median tumor size was 94 mm (IQR 25–75: 60–139). The median patients’ age was 38.7 years old (IQR 25–75: 33.4–42.7) with a median body mass index of 23.6 kg/m² (IQR 25–75: 21.2–27.7). Among all patients, 469 (74.4%) underwent SSS and 161 (25.6%) FSS. Up to 351 patients (56.3%) did not have children, but only 12 (1.92%) had oocyte preservation before treatment. Patients in the FSS group compared to SSS group showed a non-significant difference in recurrences (8.7% vs. 11.8%, respectively; p = 0.31) and deaths (1.2% vs. 5.5%, respectively; p = 0.087) during the follow-up. No significant differences were found between epithelial and non-epithelial ovarian cancer both in recurrences (9.1% vs. 8.3%, respectively; p = 0.998) and deaths (4% vs. 3.6%, respectively; p = 0.997) among patients who underwent FSS.

Conclusion FSS seems a safe option for treatment of early-stage ovarian cancer in patients who want to preserve fertility; either for epithelial and non-epithelial histology.

Disclosures None

Abstract #321

COMBINATION OF IGF1R INHIBITION WITH PD-1 BLOCKADE RESULTS IN SIGNIFICANT ANTI-TUMORAL ACTIVITY IN EPITHELIAL OVARIAN CANCER

Shilav Meisel-Sharon, 1Lina Somi-Gannam, 2Shay Hantisteanu, 1Hallak Mordechai, 2Haim Werner, 1Yan Bruchim*, 3Hillel Yaffe medical center, Hadera, Israel; 4Tel-Aviv University, Tel-Aviv, Israel; 5Hillel Yaffe Medical center, Hadera, Israel

Objectives IGF1 receptor (IGF1R) plays a key role in regulating growth and invasiveness in epithelial ovarian cancer (EOC), therefore, it is regarded as a promising therapeutic target. Recently, it has been shown that IGF1 can regulate dendritic cell (DC) maturation and T cell activation. Our study aims to investigate the combination effect of IGF1R inhibition and anti-PD-1 treatment on EOC.

Methodology EOC cell lines were co-cultured with IGF1R inhibitor (AEW-541)-treated-DCs. DC differentiation and EOC proliferation levels were evaluated by Flow Cytometry Assay (FACS). C57BL/6 mice with established peritoneal ovarian cancer were injected with single or combined anti-PD-1 and AEW-541 treatment, and their survival was evaluated. Conventional DCs and T-cell population levels were analyzed by FACS. Finally, RNA was extracted from tumors and RNA sequencing was performed.

Results IGF1R inhibitor treatment significantly induced DC differentiation in AEW-541 pre-treated-DCs compared to control after 24 h. In addition, Differentiated AEW-541-treated-DCs significantly decreased EOC cell proliferation. In vivo experiment showed that combined anti-PD-1/IGF1R treatment decreased tumor weight compared to single treatments. Moreover, the anti-PD-1/IGF1R treatment significantly increased the conventional DCs compared to AEW-541 and anti-PD-1 treatments. The Gene Ontology (GO) analysis indicated that the most significant differential biological process terms were immune response by increased lymphocytes cells activation.

Conclusion IGF1R pathway inhibition in differentiated DCs suppressed EOC cell proliferation. IGF1R inhibitor combined with anti-PD-1 may result in enhanced anti-tumor activity. Thus, restoring the anti-tumor immune response by IGF1R targeting in combination with immunotherapy may be an effective therapy for EOC.

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