**EP012/#719**

**GENOME-WIDE CELL-FREE DNA ANALYSIS ALGORITHMS FOR EARLY DETECTION AND PREDICTION OF PROGNOSIS OF OVARIAN CANCER**

1Joseph Noh*, 1Yoo Young Lee, 2Chel Hun Choi, 1Tae-Joong Kim, 2Byoung Gie Kim, 1Lee Jeong-Won. 1Samsung Medical Center, Obstetrics and Gynecology, Seoul, Korea, Republic of; 2Samsung Medical Center, Department of Obstetrics and Gynecology, Seoul, Korea, Republic of; 3Sungkyunkwan University School of Medicine, Samsung Medical Center, Seoul, Republic of

**Methods** Whole blood samples from epithelial ovarian cancer patients (n=120) stored in a biobank were used to develop AI algorithms for genome-wide analysis of cfDNA. Convolutional neural network (CNN) and multilayer perception (MLP) deep learning methods were used for algorithm development. Another batch of whole blood samples from the patients who were newly-diagnosed with ovarian tumor (both benign and malignant) were prospectively collected and run through the developed algorithms. Sensitivity and specificity of the developed algorithms in differentiating malignant tumors from benign tumors were explored.

**Results** A total of 219 whole blood samples from the patients who were newly-diagnosed with ovarian tumor were run through the algorithms and the probability scores of malignancy were calculated. The probability scores calculated by the analysis of DNA fragmentation size, patterns of sequence of end motif, regional mutation types and their density were found to be significantly higher in cancer patients than those with benign tumors. Furthermore, these scores became increasingly higher as the extent of disease assessed by the FIGO staging system increased. This machine-learning model incorporating genome-wide cfDNA analysis had sensitivities of detection at 92% at 98% specificity, with an overall area under the curve value of 0.99.

**Conclusion/Implications** The use of AI algorithms for analyzing cfDNA yielded high diagnostic accuracy for epithelial ovarian cancer demonstrating the potential value of precision oncology based on whole-genome analysis.

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**EP014/#682**

**EFFECT OF DECITABINE COMBINED WITH BELOTECAN ON T-CELL MEDIATED IMMUNITY IN OVARIAN CANCER**

1Soo Jin Park*, 1Wohnyung Park, 1Whasun Lim, 1Seungmee Lee, 2Gwonhwa Song, 3Sunwoo Park, 4Hee Seung Kim. 1Seoul National University Hospital, Obstetrics and Gynecology, Seoul, Korea, Republic of; 2College of Life Sciences and Biotechnology, Korea University, Department of Biotechnology, Seoul, Korea, Republic of; 3Sungkyunkwan University, Department of Biological Sciences, College of Science, Suwon, Korea, Republic of; 4Keimyung University School of Medicine, Department of Obstetrics and Gynecology, Daegu, Korea, Republic of; 5Gyeongsang National University, Department of Plant and Biomolecules Science, Jinju-si, Korea, Republic of

**Methods** We selected five human (ES2, OV90, SKOV3, TOV21G, TOV112D) and one mouse ovarian cancer lines (ID8). After we selected belotecan after comparison of the cytotoxic effect of topotecan, we determined the concentration of decitabine not showing the additive cytotoxic effect when combined with belotecan. We administered decitabine of 0.17 mg/kg five times daily eight weeks after we inoculated TOV21G and TOV112D cell lines. Moreover, the low concentration of decitabine did not show the additive cytotoxic effect when combined with belotecan.

**Results** OuDPt showed to induce apoptosis and regression of uterine endometrial cancer, suppression of ovarian and pancreatic cancer growth, regression of early suspicious pancreatic cancer, enhancement of chemotherapy effect of pancreatic cancer and stop of cancer-related bleeding.

**Conclusion/Implications** However, such anti-cancer effect by OuDPt shows insufficient efficacy for advanced cancer in long term treatment. Nonetheless, the anti-cancer effect by OuDPt may be availed for cancer prevention. Further study is warranted. Reference: 1. Ou MC et al. Cancer Symposium: Hallmarks of Cancer. Seattle, WA, USA, 2019, P1.11. 2. Ou MC et al. 2nd JCA-AACR precision cancer medicine international conference. Kyoto, Japan, 2023, 5–4. 3. Ou MC et al. APJCP, 2023;24(8) (in press).

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**EP013/#1522**

**OU MC DECRESCENDO PHENOMENON AS A COMPONENT OF PHYSICAL ACTIVITY FOR CANCER PREVENTION**

Ming-Cheh Ou*. Zhong-Xiao Branch/Taipei City Hospital, Obs and Gyn, Taipei City, Taiwan

**Introduction** The causal relationship between physical activity and anti-cancer effect are not proved by the current studies. Ou MC decrescendo phenomenon treatment (OuDPt) as a component of physical activity, shows an anti-cancer effect.

**Methods** We review the anti-cancer effects of the Ou decrescendo phenomenon treatment (OuDPt) in the context of physical activity and human body anatomical axes (HBAAs).

**Results** OuDPt showed to induce apoptosis and regression of uterine endometrial cancer, suppression of ovarian and pancreatic cancer growth, regression of early suspicious pancreatic cancer, enhancement of chemotherapy effect of pancreatic cancer and stop of cancer-related bleeding.

**Conclusion/Implications** Even though decitabine does not increase expressions of PD-1 and CTLA4 as targets of immune checkpoint inhibitors, it may increase CD3+CD8+T cells in the spleen and ovarian cancer cells when combined with belotecan.