

LBA36 Association of PD-L1 expression and gene expression profiling with clinical response to pembrolizumab in patients with advanced recurrent ovarian cancer: Results from the phase II KEYNOTE-100 study

J.A. Ledermann¹, R. Shapira-Frommer², A. Santin³, A.S. Lisyanskaya⁴, S. Pignata⁵, I. Vergote⁶, F. Raspagliesi⁷, G.S. Sonke⁸, M.J. Birrer⁹, D.M. Provencher¹⁰, J. Sehouli¹¹, N. Colombo¹², A. González-Martín¹³, A. Oaknin¹⁴, P.B. Ottevanger¹⁵, V. Rudaitis¹⁶, R. Cristescu¹⁷, J. Kobie¹⁷, J. Ruman¹⁷, U.A. Matulonis¹⁸

¹CRUK and UCL Cancer Trials Centre, UCL Cancer Institute, University College London, London, UK, ²Medical Oncology, Sheba Medical Center, Ramat-Gan, Israel, ³Gynecologic Oncology, Yale School of Medicine, New Haven, CT, USA, ⁴Onco-Gynaecology, St. Petersburg City Oncology Hospital, St. Petersburg, Russian Federation, ⁵Dipartimento Uro-Ginecologico, Istituto Nazionale Tumori di Napoli, Naples, Italy, ⁶Obstetrics and Gynecology and Gynecologic Oncology, University Hospital Leuven, Leuven, Belgium, ⁷Surgery, Fondazione IRCCS Istituto Nazionale Tumori Milan, Milan, Italy, ⁸Medical Oncology, Netherlands Cancer Institute, Amsterdam, Netherlands, ⁹Hematology & Oncology, The University of Alabama at Birmingham, Birmingham, AL, USA, ¹⁰Medical Oncology, Centre Hospitalier de L'Université de Montréal, Montreal, QC, Canada, ¹¹Medical Oncology, Charité-Medical University of Berlin, Berlin, Germany, ¹²Gynecologic Oncology, University of Milan Bicocca and European Institute of Oncology, IRCCS Milan, Milan, Italy, ¹³Medical Oncology, Clinica Universidad de Navarra, Madrid, Spain, ¹⁴Oncology, Vall d'Hebron University Hospital, Vall d'Hebron Institute of Oncology, Barcelona, Spain, ¹⁵Medical Oncology, Radboud University Medical Center, Nijmegen, Netherlands, ¹⁶Institute of Clinical Medicine, Vilnius University Faculty of Medicine, Vilnius, Lithuania, ¹⁷Medical Oncology, Merck & Co., Inc., Kenilworth, NJ, USA, ¹⁸Medical Oncology, Dana-Farber Cancer Institute, Boston, MA, USA

Background: KEYNOTE-100 (NCT02674061) showed pembrolizumab (pembro) has clinical activity in patients (pts) with advanced ovarian cancer (AOC), and PD-L1 expression (combined positive score [CPS] ≥ 10) was associated with response. Other biomarkers possibly associated with response were evaluated.

Methods: Key inclusion criteria included epithelial ovarian, fallopian tube, or primary peritoneal cancer, confirmed recurrence following front-line platinum-based therapy, ECOG PS 0/1, and tumor sample. Pts received pembro 200 mg Q3W IV for 2 y or until progression, death, unacceptable toxicity, or consent withdrawal. Whole exome sequencing of paired tumor and normal samples determined homologous recombination deficiency genomic scar (HRD) and BRCA1/2 mutation status (BRCA) using standard algorithms. Associations of response with T-cell-inflamed 18-gene expression profile (T-cell-GEP) score, HRD, BRCA, and microsatellite instability-high (MSI-H) were evaluated.

Results: T-cell-GEP, BRCA, and HRD data were available from the first 100 pts enrolled, while MSI-H was from the entire study population (n = 319). Among patients with T-cell-GEP, distribution of GEP scores was significantly higher in responders than nonresponders (1-sided p = 0.03 from Wilcoxon rank sum test; n = 83). 7/83 pts (8.4%) had a response. In pts with available PD-L1 CPS and GEP (n = 79; Spearman's correlation $\rho = 0.57$), the area under the receiver characteristic curves for CPS and T-cell-GEP were numerically similar (0.73 vs 0.72, respectively). No statistically significant differences were observed with HRD values among responders and nonresponders (1-sided p = 0.29; n = 71). No association between BRCA status (n = 11 mutant; n = 60 wild type) and response was observed (1-sided p = 0.65). 6/71 pts (8.5%) in this population had a response. Of 319 paired samples tested for MSI-H, all were MSS.

Conclusions: In addition to PD-L1 CPS, T-cell-GEP was associated with a response to pembro monotherapy for treatment of AOC in a single-arm setting, while HRD biomarkers (HRD, BRCA) were not found to be associated with response.

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