Conclusions

- 50.5% of patients with advanced ovarian cancer had PD-L1–positive disease using a CPS cutoff ≥1
- Prevalence of PD-L1 positivity increased with FIGO stage and the degree of platinum sensitivity
- Patients with PD-L1–positive advanced ovarian cancer may have better survival compared with patients with PD-L1–negative disease (median OS, 50.4 vs 38.3 months; aHR, 0.71; 95% CI, 0.55-0.91)
- Association was stronger among platinum-sensitive patients, particularly those with partial platinum sensitivity

Introduction

Ovarian cancer is the seventh most common cancer for women worldwide with 239,000 cases diagnosed in 2012; almost two-thirds of women (64%) died of their disease (1). The predominant therapy for early-stage ovarian cancer is surgery followed by first-line platinum-based chemotherapy (2), whereas the prevalence of PD-L1 in patients with advanced ovarian cancer receiving standard of care therapy.

Materials and methods

Retrospective observational study of banked tissue samples from 376 patients linked to clinical data from patients with advanced ovarian cancer treated from 2004 to 2012, at Herlev University Hospital and Rigshospitalet, Copenhagen, Denmark.

Inclusion Criteria

≥18 years of age, FIGO stage II-IV epithelial ovarian cancer, primary peritoneal cancer, or fallopian tube cancer, primary/interval debulking surgery followed by first-line platinum therapy.

Method

PD-L1 expression measured in formalin-fixed, paraffin-embedded surgical tissue using the clinical trial version of the PD-L1:HC 22C3 pharmDx assay (Agilent Technologies, Santa Clara, CA, USA). Staining was scored using a combined positive score (CPS), defined as the number of PD-L1-positive cells (tumor cells, lymphocytes, and macrophages) divided by the total number of tumor cells × 100 (Figure 1). Positivity in this analysis was defined as CPS ≥1 (previously reported equivalent to CPS ≥11).

Table 1: Baseline Demographics and Clinical Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Total</th>
<th>Platinum sensitive</th>
<th>Platinum insensitive</th>
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</thead>
<tbody>
<tr>
<td>Median age, years</td>
<td>64.8</td>
<td>65.2 (58-73)</td>
<td>63.9 (55-72)</td>
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<tr>
<td>FIGO stage</td>
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<tr>
<td>TFI duration</td>
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</tr>
<tr>
<td>OS median (95% CI)</td>
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<td>40.4 (34.2-46.8)</td>
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Results

Baseline Demographics and Clinical Characteristics

376 patients were included in this analysis, with a median age of diagnosis of 63 years (range: 26-86). 50.5% of patients had PD-L1-positive tumors (CPS 2+). An increase in prevalence was observed in patients whose tumors were histological type II (P = 0.011), in patients with increasing FIGO stage at diagnosis (P = 0.047), and patients with increasing TFI duration (P = 0.027). (Table 1)

Figure 1. Examples of PD-L1–Positive and Negative Immunohistochemistry Staining

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Median (95% CI) OS for the overall population was 43.1 (range: 38.2-48.2).

Platinum sensitive patients with PD-L1-positive tumors had significantly longer OS (10.4 months; range: 39.5-10.1) compared to those patients whose tumors were PD-L1-negative (38.3 months; range: 31.2-44.5). (Figure 2). The association between PD-L1 expression and OS was not significant in platinum insensitive disease (aHR: 0.82 [95% CI, 0.59-1.0]; however there was a trend toward significance in platinum sensitive disease (0.77 [0.57-1.0]) (Figure 3). The trend toward statistical significance in platinum sensitive patients was driven by patients whose disease was partially platinum sensitive (aHR: 0.93 [95% CI, 0.80-1.05]) compared to those whose disease was fully platinum sensitive (1.0 [0.82-1.6]) (Figure 4).

Figure 2

Overall Survival: PD-L1 Status and FIGO Stage

Figure 3

Overall Survival: PD-L1 Status and Platinum Sensitivity

Figure 4

Overall Survival: PD-L1 Status and TFI Status

REFERENCE


ACKNOWLEDGED

We would like to thank Caucasian tissue study coordinator and histology. Bo Zheng (statistical programming), Hisako Ohashi (clinical study manager), Simon Rasmussen (clinical study manager), and all the study investigators for their support and for their efforts in the clinical study. The authors thank the members of the it is the American Society of Clinical Oncology. The content and interpretation of this article are solely the responsibility of the authors and do not necessarily reflect the views of the American Society of Clinical Oncology or the National Institutes of Health. The authors would like to thank the Merck & Co., Inc., Kenilworth, N. J. USA, for funding this research. The research was conducted by Michael B. cit., Kjellerup, Cit., Kjellerup, USA. Funding for this research was provided by Merck & Co., Inc., København, Denmark.

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