

# Safety and efficacy results of the combination of DPX-Survivac, pembrolizumab and intermittent low dose cyclophosphamide (CPA) in subjects with advanced and metastatic solid tumours (preliminary results)

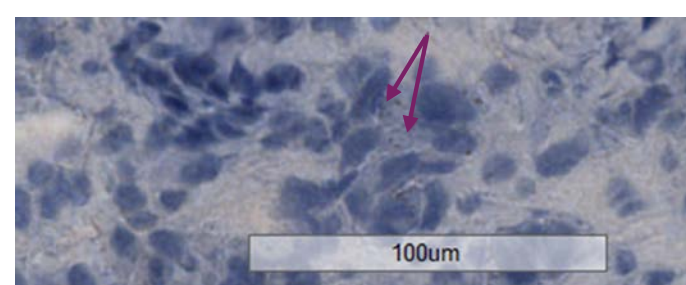
Henry Conter<sup>1</sup>, James Strauss<sup>2</sup>, Eva Chalas<sup>3</sup>, Vincent Castonguay<sup>4</sup>, Stephan Fiset<sup>5</sup>, Lisa D. MacDonald<sup>5</sup>, Yogesh Bramhecha<sup>5</sup>, Rebekah Conlon<sup>5</sup>, Marya Chaney<sup>6</sup>, Gabriela N. Rosu<sup>5</sup>

<sup>1</sup>William Osler Cancer Centre, Ontario, Canada, <sup>2</sup>Mary Crowley Research Center, Texas, USA, <sup>3</sup>NYU Winthrop, New York, USA, <sup>4</sup>CHU-de-Quebec, Quebec, Canada, <sup>5</sup>IMV Inc., Nova Scotia, Canada, <sup>6</sup>Merck & Co., Inc., Kenilworth, New Jersey, USA

## Background

DPX-Survivac is a novel and unique T cell activating therapy that generates *de novo* T cells against survivin. The oil-based product is administered by small-volume subcutaneous injection.

In Phase 1/1b maintenance studies in OvCa, it was shown that DPX-Survivac can generate a strong and specific T cell response against survivin and a long PFS interval has been observed in some subjects (> 7 years). In Phase 1b/2 studies the infiltration of tumours by survivin-specific T cells was correlated to tumour regressions. In all trials to date, DPX-Survivac shows a well-tolerated safety profile with the majority of events being grade 1 and 2 local site reactions.



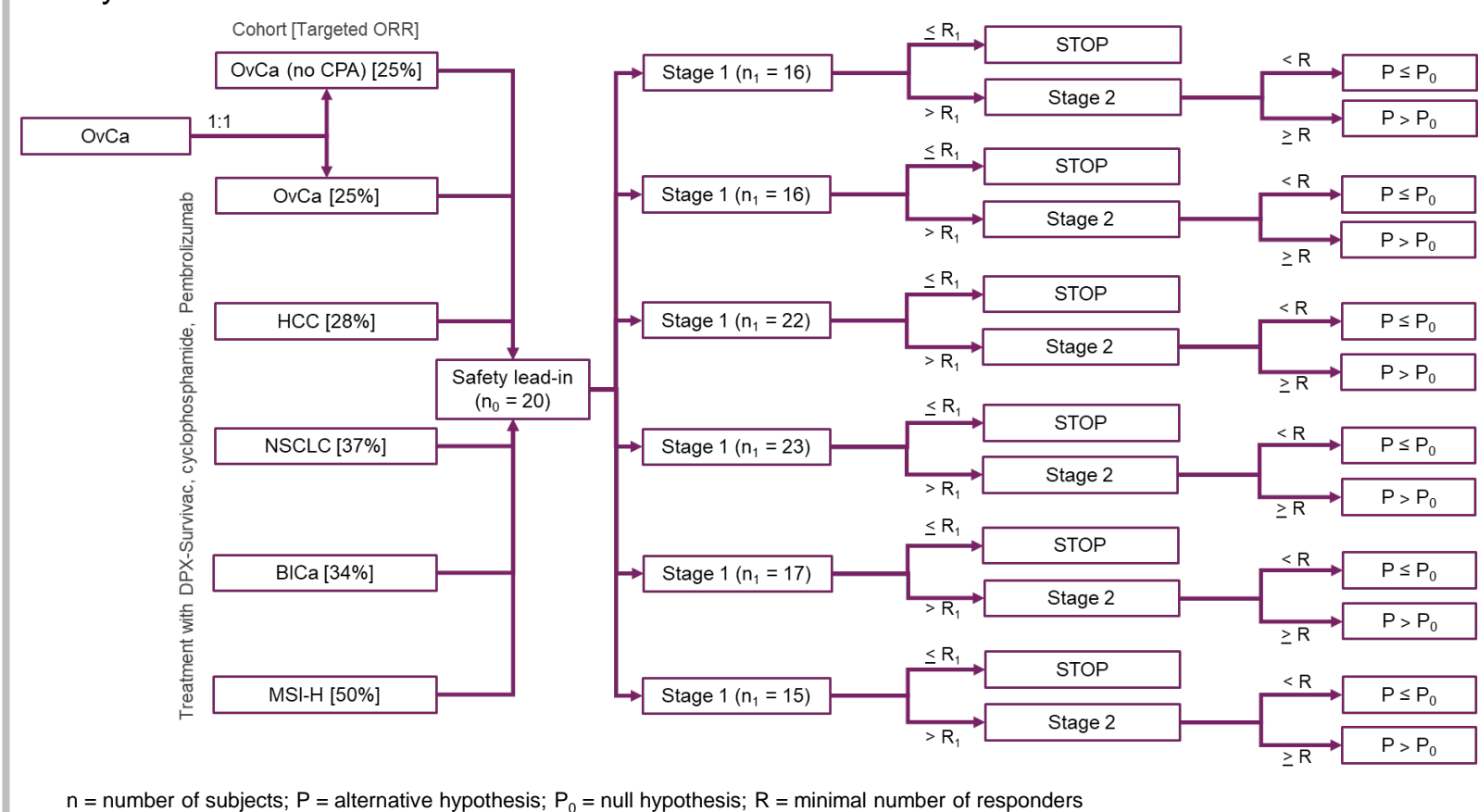
Survivin-specific T cells detected by immunohistochemistry in Phase 1b/2 OvCa trial subject

Pembrolizumab is a potent humanized immunoglobulin G4 (IgG4) monoclonal antibody (mAb) with high specificity of binding to the programmed cell death 1 (PD-1) receptor, thus inhibiting its interaction with programmed cell death ligand 1 (PD-L1) and 2 (PD-L2).

Intermittent low dose cyclophosphamide (CPA) is used as a "biological response modifier". Studies have shown that low doses of CPA can have selective effects on the immune system that may augment the efficacy of immunotherapies.

## Study Design

- Multicenter Phase 2 study, ongoing in Canada and the United States
- Primary objectives: objective response rate (ORR) using RECIST v1.1 and safety
- Secondary objectives: ORR, DoR, DCR, and PFS using iRECIST; overall survival; comparison of ORR for ovarian cancer treatment arms
- Exploratory objectives: changes in immune cell infiltration; assessment of potential biomarkers; peripheral levels of cell mediated immunity; patient reported outcomes
- Treatment: DPX-Survivac 2 x 0.25 mL SC q3w followed by up to 11 x 0.1 mL q9w; oral CPA 50 mg BID on alternating weeks; pembrolizumab 200 mg IV on day 1 of every three-week cycle



## Demographics

Table 1: Baseline subject demographics and disposition (N=15)

| Parameter                              | Statistic                 | All n (%) | OvCa (+CPA) | OvCa (-CPA) | HCC     | NSCLC    | BiCa     | MSI-H   |
|----------------------------------------|---------------------------|-----------|-------------|-------------|---------|----------|----------|---------|
| N                                      | -                         | 15        | 4           | 4           | 2       | 2        | 2        | 1       |
| Age (years)                            | Median                    | 71        | 57          | 69          | 81      | 72       | 72       | 71      |
|                                        | Min, max                  | 45-85     | 45-68       | 50-85       | 79-83   | 71-73    | 66-77    | -       |
| Sex                                    | Male                      | 5 (33.3)  | 0           | 0           | 2 (100) | 1 (50.0) | 2 (100)  | 0       |
|                                        | Female                    | 10 (66.7) | 4 (100)     | 4 (100)     | 0       | 1 (50.0) | 0        | 1 (100) |
| Race n (%)                             | White                     | 13 (86.7) | 3 (75.0)    | 4 (100)     | 2 (100) | 1 (50.0) | 2 (100)  | 1 (100) |
|                                        | Black or African American | 1 (6.7)   | 1 (25.0)    | 0           | 0       | 0        | 0        | 0       |
|                                        | Asian                     | 1 (6.7)   | 0           | 0           | 0       | 1 (50.0) | 0        | 0       |
| ECOG                                   | 0                         | 10 (66.7) | 3 (75.0)    | 3 (75.0)    | 2 (100) | 1 (50.0) | 0        | 1 (100) |
|                                        | 1                         | 5 (33.3)  | 1 (25.0)    | 1 (25.0)    | 0       | 1 (50.0) | 2 (100)  | 0       |
|                                        | 2                         | 2 (13.3)  | 0           | 1 (25.0)    | 0       | 0        | 1 (50.0) | 0       |
|                                        | ≥ 4                       | 5 (33.3)  | 1 (25.0)    | 3 (75.0)    | 0       | 1 (50.0) | 0        | 0       |
| Receipt of Platinum?                   | Yes                       | 11 (73.3) | 4 (100)     | 3 (75.0)    | 0       | 2 (100)  | 1 (50.0) | 1 (100) |
|                                        | No                        | 4 (26.7)  | 0           | 1 (25.0)    | 2 (100) | 0        | 1 (50.0) | 0       |
| Receipt of Prior Checkpoint Inhibitor? | Yes (exposed)             | 3 (20.0)  | 0           | 0           | 0       | 2 (100)  | 1 (50.0) | 0       |
|                                        | No (naïve)                | 12 (80.0) | 4 (100)     | 4 (100)     | 2 (100) | 0        | 1 (50.0) | 1 (100) |
| Disposition                            | On treatment              | 13 (86.7) | 4 (100)     | 4 (100)     | 2 (100) | 1 (50.0) | 2 (100)  | 0       |
|                                        | Discontinued              | 2 (13.3)  | 0           | 0           | 0       | 1 (50.0) | 0        | 1 (100) |
| Reason for Discontinuation             | Progression               | 1 (6.7)   | 0           | 0           | 0       | 1 (50.0) | 0        | 0       |
|                                        | Withdrawn consent         | 1 (6.7)   | 0           | 0           | 0       | 0        | 0        | 1 (100) |

## Tumour Infiltration

- On-treatment increase in diversity of tumour infiltrating T cells observed in biopsy samples

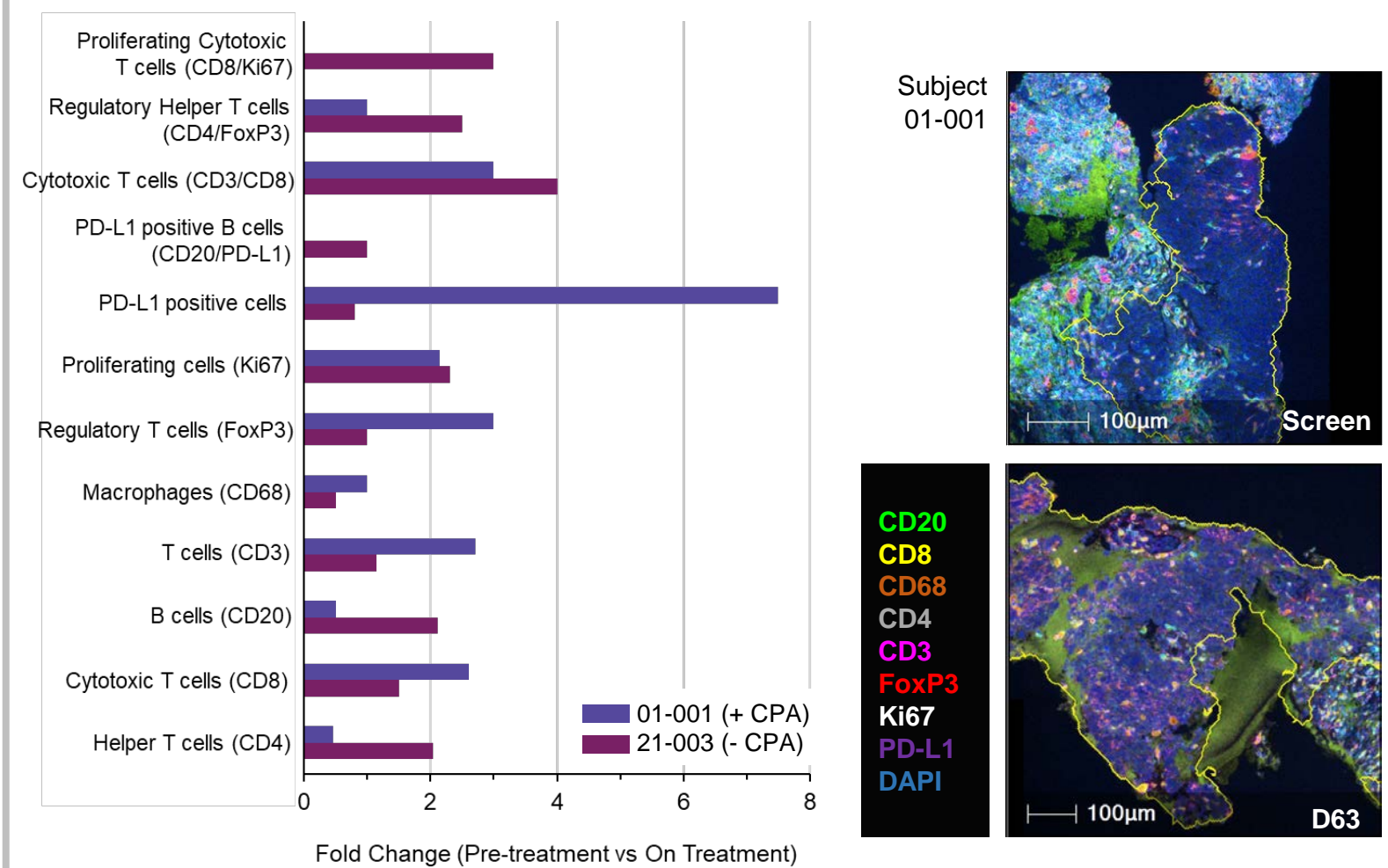


Figure 1: Treatment-induced increases in tumour immune infiltration demonstrated by multiplex IHC. Fold changes in pre-treatment and on-treatment (D56-D70) biomarker infiltration of two OvCa subjects (left) and representative images from one subject (right).

## Safety

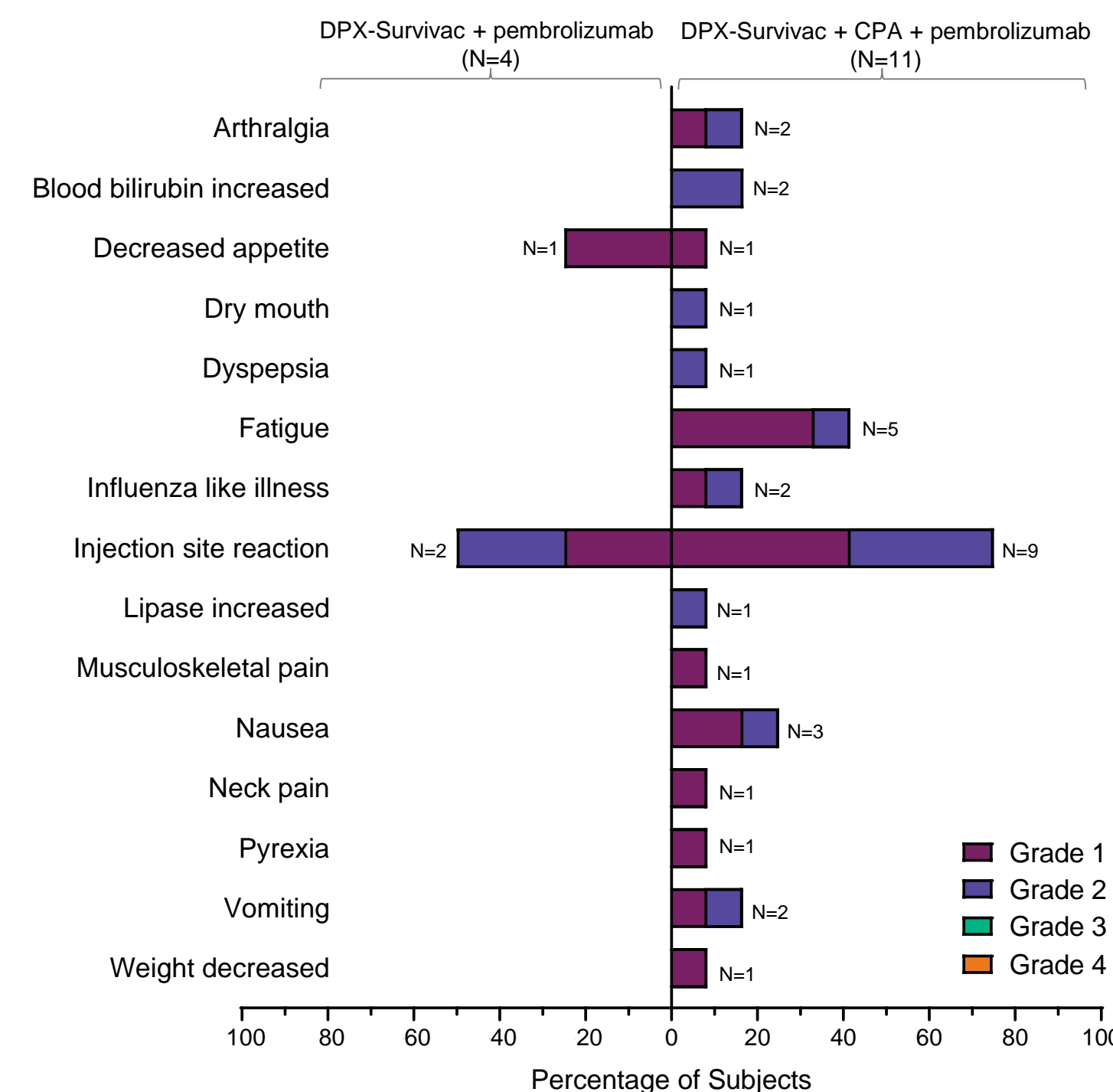


Figure 2: Treatment-related adverse events occurring in at least one subject. AE are counted once per subject at the highest grade observed.

## Response

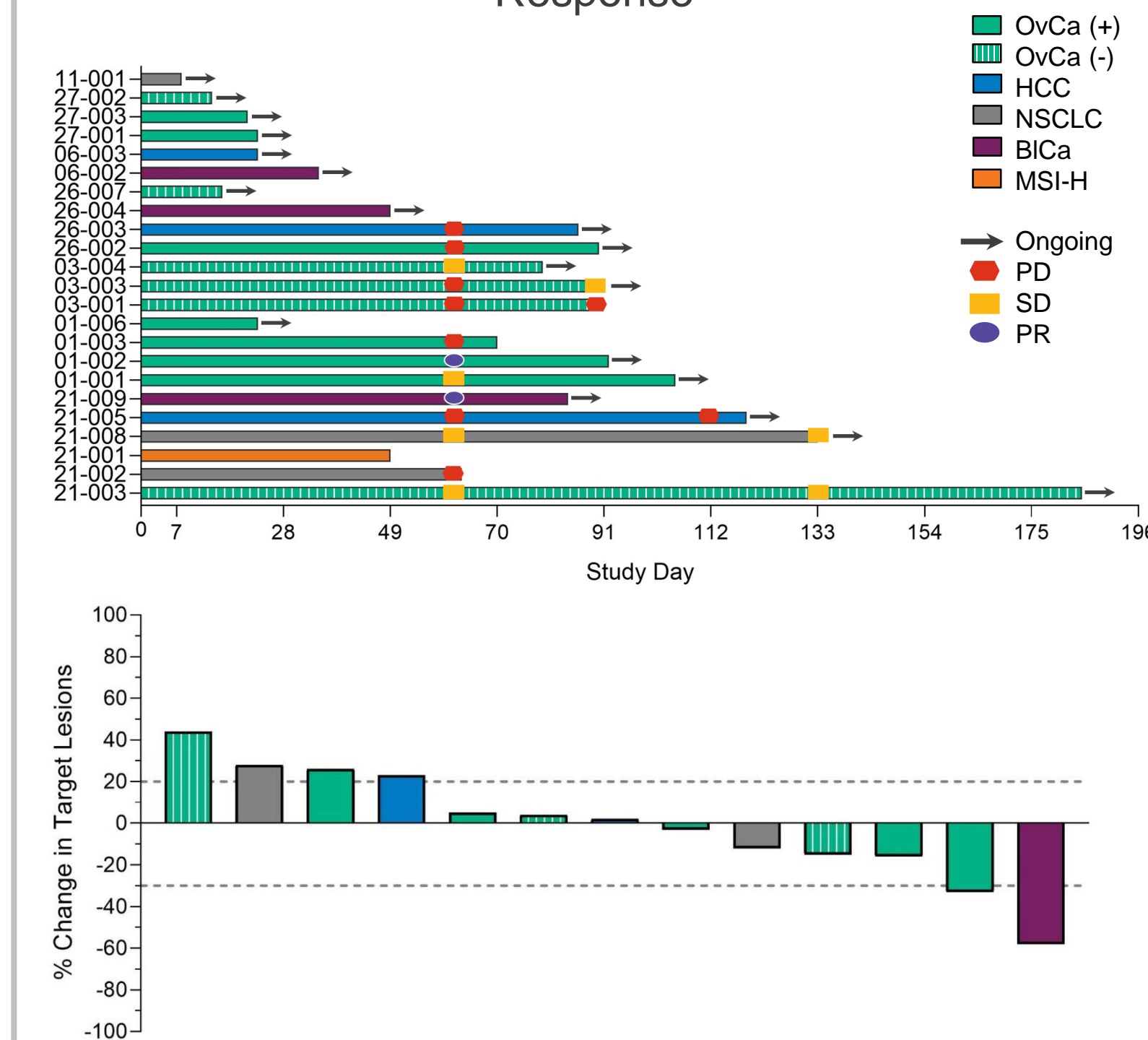


Figure 4: Duration of treatment (top) and waterfall analyses (bottom) of best on-study clinical response by RECIST v1.1 for evaluable study subjects.

## Conclusions

- 23 subjects have been enrolled at time of cut-off in recurrent ovarian cancer, hepatocellular, non-small cell lung cancer, bladder cancer and MSI-H cancers
  - 19 subjects received DPX-Survivac, pembrolizumab, CPA and 4 DPX-Survivac with pembrolizumab
- Preliminary results from 1<sup>st</sup> on study scan show tumour reduction in subjects with ovarian, non-small cell lung and bladder cancer, with partial responses observed in 2 subjects to date
- T cell infiltration observed in subjects with tumour reduction after treatment
- Ovarian cancer subjects were randomized to treatment +/- CPA; tumour control and reductions are observed in both groups
- Treatments have been well tolerated with no Grade 3-4 events reported
- No irAE have been reported to date

## Further Information

Corresponding Author: [grosu@imv-inc.com](mailto:grosu@imv-inc.com) ClinicalTrials.gov Identifier: NCT03836352  
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 Conflict of Interest: HC, EC, VC have no conflict of interest to declare. JS has stock or ownership interests in Abbvie, Abbott Laboratories, Bristol-Myers Squibb, Intuitive Surgical, Johnson & Johnson, Merck; a consultancy or advisory role with Tempus; and an other relationship with Dialectic Therapeutics. SF, LDM, YB, RC, GNR are all employees of IMV Inc. MC is an employee of Merck Sharp & Dohme Corp., a subsidiary of Merck & Co., Inc., Kenilworth, NJ, USA.

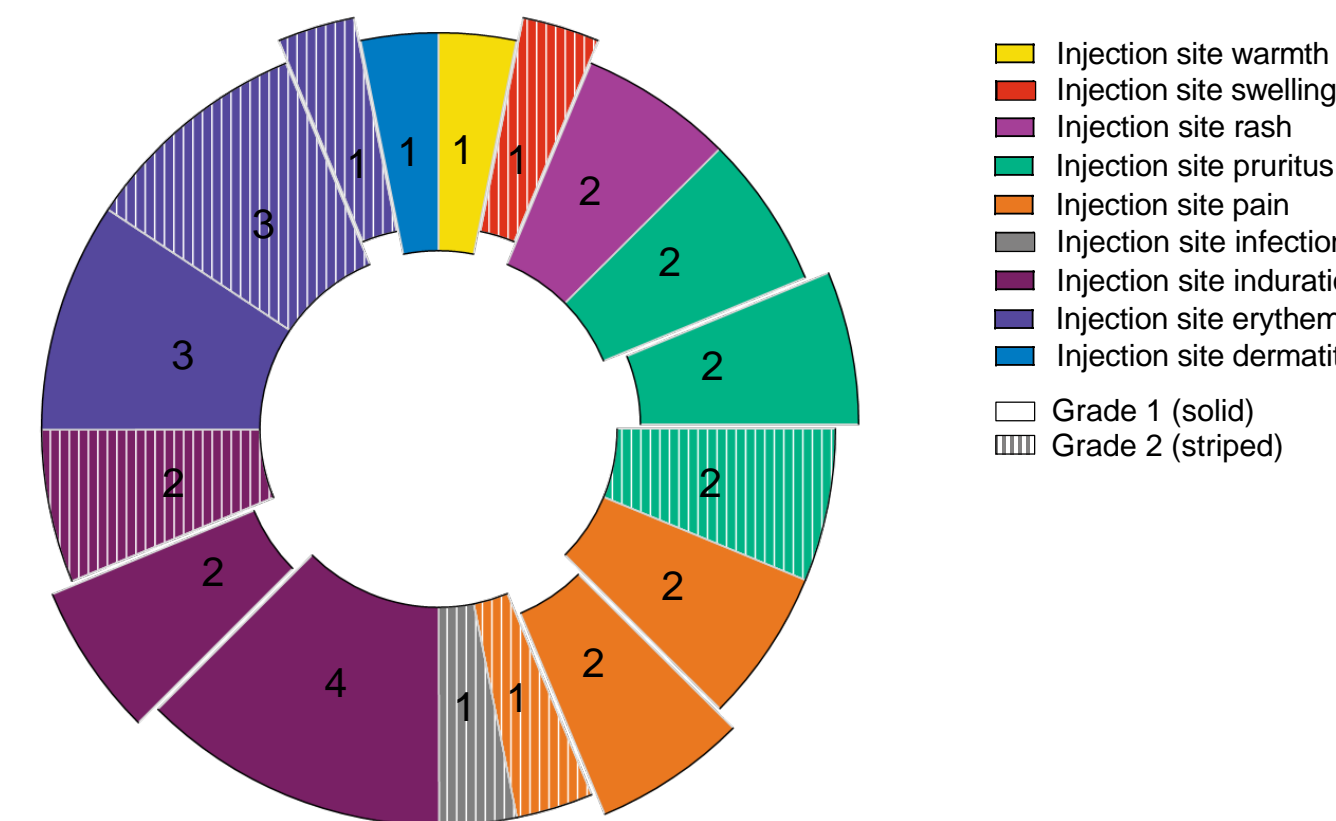


Figure 3: Summary of reactions occurring after injection with one or more doses of DPX-Survivac. Events are shown once per subject and at the highest grade observed. Pull outs represent events occurring in subjects not receiving CPA.