Background Clinical trials for ovarian cancer using immune checkpoint inhibitors (ICI) as monotherapy have failed to show an improvement in survival, however, improved response rates and survival have been achieved with combination therapy. A novel cancer vaccine platform based on silicified cancer cells that are masked on the surface with microbial-associated molecules has been shown in preclinical trials to reduce tumor burden in mice with disseminated ovarian cancer. Here we evaluate the therapeutic efficacy of combination ICI and vaccination.

Methods Female FVB mice were administered intraperitoneal (IP) injections of BR5-Akt-Luc cells. Mice were given two weekly IP vaccinations, with and without anti-mPD-1 antibody, beginning 8 days post tumor challenge. Bioluminescent imaging was performed using the IVIS Spectrum.

Results Bioluminescent imaging (figure 1) and animal weights indicated excessive tumor burden in untreated mice with animals sacrificed around 25 days post tumor challenge. ICI monotherapy provided no therapeutic benefit, however when combined with vaccination, tumor was undetectable in 80% of the mice 10 days post vaccination, with all mice surviving to Day 49. Tumor did not engraft in surviving mice when rechallenged on Day 50.

Conclusions A silicified cancer vaccine delivery system when combined with ICI is able to reduce tumor burden and enhance survival in mice with established ovarian cancer.

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REFERENCE