Poster 1: Survival outcomes of gynecologic oncology patients treated with immune checkpoint inhibitors who received SARS-CoV2 vaccination

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Topic
Other: Immunotherapy

Objectives
Personalized mRNA vaccines, targeting specific tumor antigens, have been shown to enhance the effects of immune checkpoint inhibitors (ICIs). However, utilization is limited by resource intensive manufacturing processes. While unselected targeting of non-tumor antigens via SARS-CoV2 vaccination has shown promise for sensitization to ICI in other disease sites, studies evaluating this effect on ICI response in gynecologic malignancies are limited. Our objective was to compare survival outcomes amongst a cohort of patients receiving ICI for a gynecologic cancer diagnosis stratified by SARS-CoV2 vaccination status.

Methods
We conducted a retrospective cohort study of patients diagnosed with a gynecologic malignancy and treated with an ICI between 2014-2024. Clinicopathologic and treatment variables were manually abstracted from electronic medical records. Cases were stratified according to the receipt of SARS-CoV2 vaccination within 120 days of ICI initiation. Student t-tests, Fisher's exact tests, chi-square tests, Mann-Whitney U tests and Kaplan-Meier survival analysis, were performed.

Results
A total of 197 patients were included. Among these, 54.6% (n = 106) had uterine cancer, 26.3% (n = 51) had cervical cancer, 7.7% (n = 15) had vulvar or vaginal cancer, and 11.3% (n = 22) had ovarian cancer. The majority of patients (80.5%, n = 150) received ICIs for recurrent cancer. All patients were treated with a PD-1 inhibitor, with pembrolizumab being the most common ICI (94.0%, n = 185). Baseline patient characteristics are summarized in Table 1. Among all patients, median PFS was 15.0 (SE ± 4.9) months among the COVID-19 vaccinated group and 5.9 (SE ± 0.7) months among the no vaccine group (p=0.041). For patients with endometrial cancer, median PFS was 17.3 (SE ± 5.1) months among the COVID-19 vaccinated group and 6.1 (SE ± 0.4) months among the unvaccinated group (p=0.034).

Conclusions
SARS-CoV2 vaccination is associated with prolonged PFS in patients receiving ICI therapy for a gynecologic malignancy. Clinically available vaccinations directed against non-tumor antigens such as SARS-CoV2 may modulate immune response to ICI. Prospective evaluation of unselected mRNA vaccine strategies to improve ICI efficacy are warranted.

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Abstract Table or Graph

Table 1 – Characteristics of patients with gynecologic cancer receiving immune checkpoint inhibitor therapy by SARS-CoV2 vaccine status.

	COVID-19 Vaccination (n=47)	No COVID-19 Vaccination (n=150)	P value
Age (mean)	59.1	69.0	<0.01*
Race and Ethnicity (%)			0.929
Non- Hispanic white	84.8	78.7	
Hispanic white	2.2	3.3	
Hispanic Black	0.0	1.3	
Non-Hispanic Black	8.7	10.0	
Asian/Asian American and Pacific Islander	2.2	2.7	
Other	2.2	3.1	
Initial Stage (%)			
I	26.1	17.1	0.587
II	13.0	13.0	
III	39.1	43.2	
IV	21.7	26.7	
MMR deficient (%)	36.7	40.0	0.738
Recurrent (%)	82.2	80.0	0.742
irAE (%)	61.7 (n=29)	58.7 (n=88)	0.378

Asterisk designates statistical significance with a $p<0.05$. Abbreviations: ECOG= Eastern Cooperative Oncology Group; MMR=mismatch repair; ICI= immune checkpoint inhibitor; irAE= immune related adverse event.