

Safety and efficacy of anti-PD-1 treatment in challenging clinical populations with head and neck squamous cell carcinoma



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INTRODUCTION

Anti-programmed cell death protein 1/programmed death ligand 1 (PD-1/PD-L1) immunotherapy is now routinely used to treat head and neck cancers. Clinical trials have excluded several populations, including patients with dysregulated immune activation or compromised immune function. This poses a dilemma for clinicians because the use of immunotherapy is rapidly expanding into a broader, real-world population that includes such patients.

OBJECTIVE

To characterize the safety and therapeutic efficacy of immunotherapy in clinically challenging head and neck patients with squamous cell carcinoma (HNSCC)

METHODS

- Study Design: Retrospective medical chart review
- Study Population:
 - Autoimmune conditions
 - Chronic immunosuppression/steroids
 - Chronic viral infections (Hep B/C, HIV)
 - Chronic organ dysfunction
 - Extremes of age (≥ 65 years).

RESULTS

- 51 patients were identified (**Table 1**)
- 42 (79%) patients were male and 9 (21%) patients were female
- Median age was 68 years (range 48 – 92 years)
- Median length of follow up was 8 months (range 0 – 37 months)
- Most patients tolerated anti-PD-1 therapy with no adverse complications. Of note, 16 patients experienced IRAEs (**Table 2**)
- Overall, 11 patients demonstrated a partial response (PR) by RECIST to anti-PD1 and 15% (8/46) patients had stable disease (SD) by RECIST after six cycles. (**Table 3**)
- With a median follow up time of 8 months, 27% (14/51) patients are still alive (**Figure 1**)

Table 1. Summary of Study Population	
Underlying condition	No. of Patients (%)
Autoimmunity	6 (11%)
Chronic Viral Infection	9 (17%)
Organ Dysfunction	17 (32%)
Lymphoma/Leukemia	1 (2%)
Extremes of Age (>65+ years)	20 (38%)

Figure 1. PFS and OS for all patients

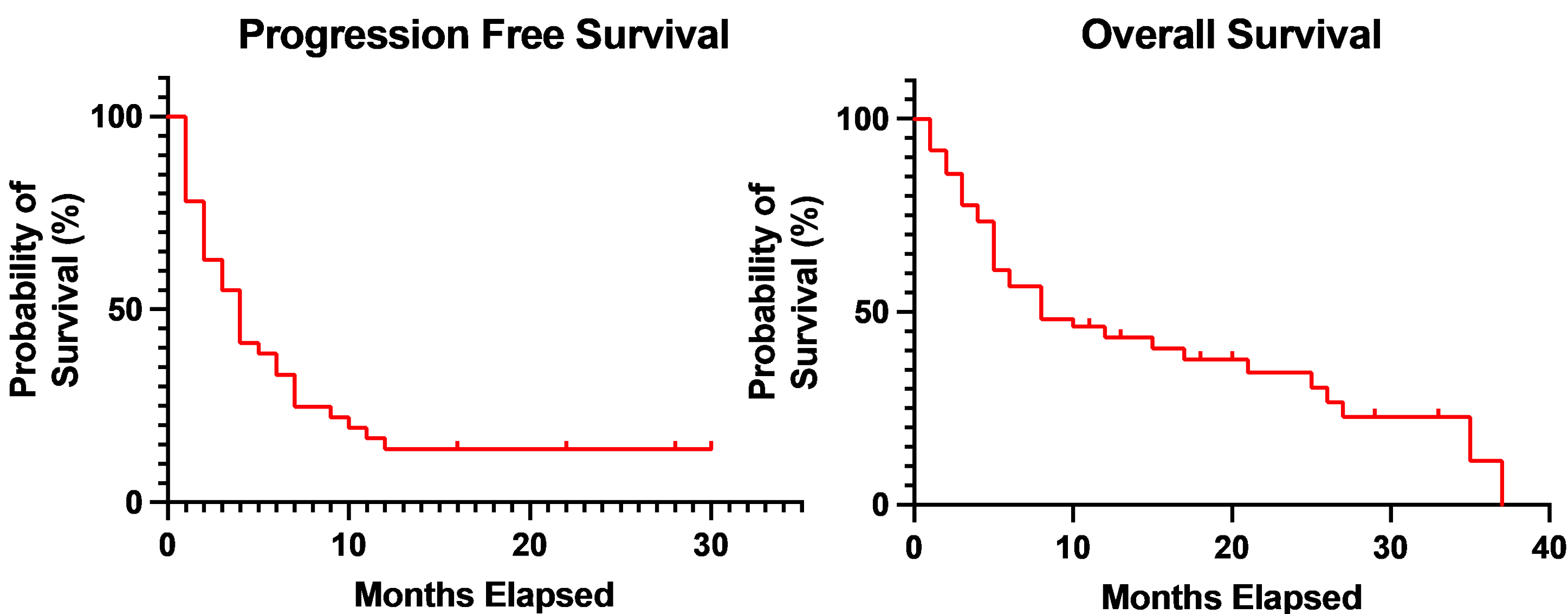


Table 2. Immune Related Adverse Events		
Cohort Type (no. of patients)	Description of Events	Resolved?
1 Autoimmunity (1)	G2 anemia	Yes, w/ transfusion
2-3 Chronic Viral Infection (2)	G2 diarrhea, G2 pancreas exocrine insufficiency	Yes, w/ enzyme supplements (1) and oral hydration (1)
4-10 Organ Dysfunction (6)	G2/G3 pneumonitis (2), G2 hyperglycemia, G2 hypothyroidism, G2 nephritis, G2 neutropenia	Yes, w/ corticosteroids (3), levothyroxine (1), diet (1),
11-17 Extremes of Age (8)	G4 hyperglycemia (1); G2 oral mucositis (2); G2 hypothyroidism (3); G2 rash (2)	Yes, w/ levothyroxine (3), insulin (1), corticosteroids (4)

Table 3. Patient Treatment Response	
Cohort	No. of Patients (%)
Autoimmune	
Partial response (PR)	1 (17%)
Stable Disease (SD)	0 (0%)
Progressive Disease (PD)	5 (83%)
Chronic Viral Infection	
Partial response (PR)	2 (22%)
Stable Disease (SD)	2 (22%)
Progressive Disease (PD)	5 (56%)
Organ Dysfunction	
Partial response (PR)	4 (29%)
Stable Disease (SD)	2 (14%)
Progressive Disease (PD)	8 (57%)
Extremes of Age	
Partial response (PR)	4 (21%)
Stable Disease (SD)	4 (21%)
Progressive Disease (PD)	11 (58%)

CONCLUSIONS

- We observed anti-PD-1 treatment induced relatively mild immune toxicities that were easily managed, and nearly a majority of patients achieved clinical responses.
- Our results support that many patients with chronic immune dysregulation or immunosuppression can tolerate treatment with anti-PD-1 therapy, however individual evaluation should be undertaken by a multidisciplinary tumor board prior to treatment.

NEXT STEPS

- Compare findings with this cohort with previously-published reports of ICI therapy used
- Evaluation of long-term effects of treatment of patients with chronic immune dysregulation or immunosuppression with anti-PD1 therapy

REFERENCES

- Johnson DB, Sullivan RJ, Menzies AM. Immune checkpoint inhibitors in challenging populations. Cancer. 2017;123(11):1904-1911.