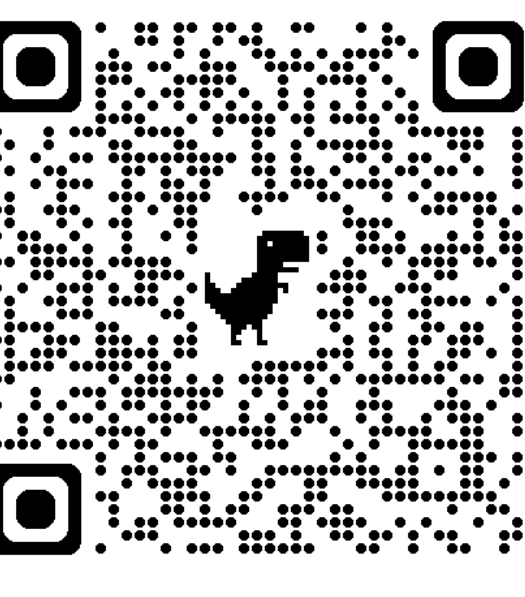


# Time to Second cSCC among Hispanic Patients: A Retrospective Study to Determine Risk Factors and Develop Follow-Up Guidelines

Kelly E. Owens<sup>1</sup> & Marla A. Rodriguez Vazquez<sup>2</sup>, Rebecca A. Zasloff<sup>1</sup>, Emily F. Cole<sup>2</sup>, Meenal K. Kheterpal<sup>2</sup>, Melodi Javid Whitley<sup>2</sup>

<sup>1</sup>Duke University School of Medicine, Durham, NC, United States

<sup>2</sup>Department of Dermatology, Duke University School of Medicine, Durham, NC, United States



## INTRODUCTION

- Cutaneous Squamous Cell Carcinoma (cSCC) is the 2<sup>nd</sup> most common type of skin cancer.
- Incidence of cSCCs is estimated to be 17-360 for white patients compared to 13.8-32.9 for Hispanic patients, per 100,000 people in US.<sup>1</sup>
- Having an initial cSCC is a risk factor for subsequent cSCCs.
- Rodriguez et al previously reported a median time of 2 years to 2<sup>nd</sup> cSCC among a predominately white cohort.<sup>2</sup>
- AAD recommends patients with their first cSCC diagnosis be screened at least annually.<sup>3</sup>
- The Hispanic population is one of fastest growing minority groups in the US.
- Time to 2<sup>nd</sup> cSCC in the US Hispanic population has not been previously reported.

## OBJECTIVES

**Primary Objective:** To determine the time to second cSCC among Hispanic patients

**Secondary Objective:** To identify risk factors for second cSCC and develop evidence-based recommendations to guide follow-up care in Hispanic patients with cSCC.

## METHODS

- Single institution study of 65 Hispanic patients with an initial cSCC diagnosed by pathology report or ICD 9/10 codes between January 1, 2013, and December 31, 2020. Confirmation of first lifetime cSCC was completed via chart review.
- Self-reported patient demographics, tumor characteristics, and treatment courses were documented for all lifetime cSCCs.
- Statistical analysis included descriptive statistics and chi-squared tests, Fisher exact tests, and t-tests to examine key differences between Hispanic patients with or without a second cSCC.
- Cox proportional hazards model was used to determine risk factors associated with developing a 2<sup>nd</sup> cSCC.
- Kaplan Meier Survival Curves were plotted and stratified by significant variables.

## RESULTS

**Table I: Demographics and Characteristics of First cSCC**

Variable	With 2nd cSCC		Without 2nd cSCC		P value
	Value	n	Value	n	
Age at initial diagnosis, y, mean (SD)	64.75 (17.79)	16	62.65 (14.76)	49	0.6409 <sup>c</sup>
Sex, n (%)		16		49	0.604 <sup>a</sup>
Male	10 (62.5)		27 (55.1)		
Female	6 (37.5)		22 (44.9)		
Race, n (%)		16		49	0.621 <sup>b</sup>
White	9 (56.25)		26 (53.1)		
Black	0 (0)		1 (2.0)		
Two or more races	0 (0)		2 (4.1)		
Other	6 (37.5)		11 (22.4)		
Not Reported/Declined	1 (6.25)		9 (18.4)		
Ethnicity, n (%)		16		49	0.022 <sup>a</sup>
Hispanic Cuban	3 (18.7)		2 (4.1)		
Hispanic Mexican	0 (0)		13 (26.5)		
Hispanic Puerto Rican	6 (37.5)		9 (18.4)		
Hispanic Other	7 (43.8)		25 (51.0)		
Primary Language		16		49	0.557 <sup>a</sup>
English	12 (75.0)		30 (61.2)		
Spanish	4 (25.0)		18 (36.8)		
Other	0 (0)		1 (2.0)		
Smoking Status, n (%)		16		49	0.996 <sup>a</sup>
Current	1 (6.25)		3 (6.1)		
Prior	6 (37.5)		19 (38.8)		
Never	9 (56.25)		27 (55.1)		
Immunosuppressed, n (%)		16		49	<0.001 <sup>a</sup>
Yes	10 (62.5)		6 (12.2)		
No	6 (37.5)		43 (87.8)		
Reason for Immunosuppression, n (%)		12		7	
Solid organ transplant	3 (25.1)		1 (14.3)		
CLL	1 (8.3)		0 (0)		
Stem cell transplant	1 (8.3)		0 (0)		
Non-CLL hematologic malignancy	1 (8.3)		0 (0)		
Inflammatory Disease	1 (8.3)		2 (28.6)		
HIV	1 (8.3)		1 (14.3)		
Other	4 (33.4)		3 (42.8)		
Tumor histologic grade, n (%)		16		49	0.204 <sup>a</sup>
well differentiated	12 (75.0)		42 (85.7)		
moderately differentiated	3 (18.8)		5 (10.2)		
poorly differentiated	0 (0)		2 (4.1)		
unknown	1 (6.2)		0 (0)		
Invasive, n (%)		16		49	0.145 <sup>a</sup>
Yes	6 (37.5)		26 (53.1)		
No	9 (56.25)		23 (46.9)		
Unknown	1 (6.25)		0 (0)		
Primary cSCC anatomic location, n (%)		16		49	0.755 <sup>b</sup>
Head/neck	8 (50.0)		22 (44.9)		
Trunk	0 (0)		3 (6.1)		
Extremities	5 (31.25)		10 (20.4)		
Hands/Feet	2 (12.5)		6 (12.2)		
Groin/Genital/Buttocks	1 (6.25)		8 (16.4)		
Perineural involvement, n (%)		16		49	0.499 <sup>a</sup>
Yes	0 (0)		1 (2.0)		
No	16 (100)		45 (91.9)		
Unknown	0 (0)		3 (6.1)		
Tumor size, cm, mean (SD)	1.4 (0.84)	12	2.0 (3.13)	45	0.2985 <sup>d</sup>
Tumor stage, n (%) <sup>*</sup>		16		49	0.839 <sup>b</sup>
T0	9 (56.25)		23 (46.9)		
T1	4 (25.0)		15 (30.6)		
T2a	1 (6.25)		2 (4.1)		
T2b	0 (0)		4 (8.2)		
T3	0 (0)		1 (2.0)		
Unknown	2 (12.5)		4 (8.2)		
Time (years) to Second cSCC, mean (SD)	2.43 (1.82)		N/A		

CLL, chronic lymphocytic leukemia; cSCC, cutaneous squamous cell carcinoma; N/A, not applicable; SD, standard deviation

<sup>\*</sup>The Brigham and Women's Hospital Tumor Staging was used

<sup>a</sup> Chi-Square

<sup>b</sup> Fisher Exact

<sup>c</sup> Two sample t-test with equal variances

<sup>d</sup> Two sample t-test with unequal variances

## RESULTS

**Table II: Cox Proportional Hazards Model Results for Risk of Subsequent cSCC**

Variable	Hazard Ratio (95% CI)	P Value
Age at first diagnosis	1.01 (0.98-1.05)	0.35
Sex: male (vs female)	0.83 (0.30-2.29)	0.72
Ethnicity: Mexican & Other (vs Cuban & Puerto Rican)	0.49 (0.18-1.34)	0.16
Primary language: English (vs Spanish)	0.95 (0.31-2.95)	0.93
Smoking: yes (no)	0.51 (0.19-1.41)	0.19
Immunosuppressed: yes (vs no)	3.81 (1.37-10.54)	<b>0.010</b>
First tumor histologic grade		
well (vs moderate)	0.37 (0.10-1.34)	0.13
Primary tumor location: trunk & extremities (vs head & neck)	1.56 (0.58-4.19)	0.37
First tumor size, cm	0.92 (0.69-1.24)	0.59
First tumor stage		
T1 (vs T0)	1.36 (0.41-4.56)	0.61
T2 (vs T0)	0.42 (0.05-3.33)	0.41

## RESULTS

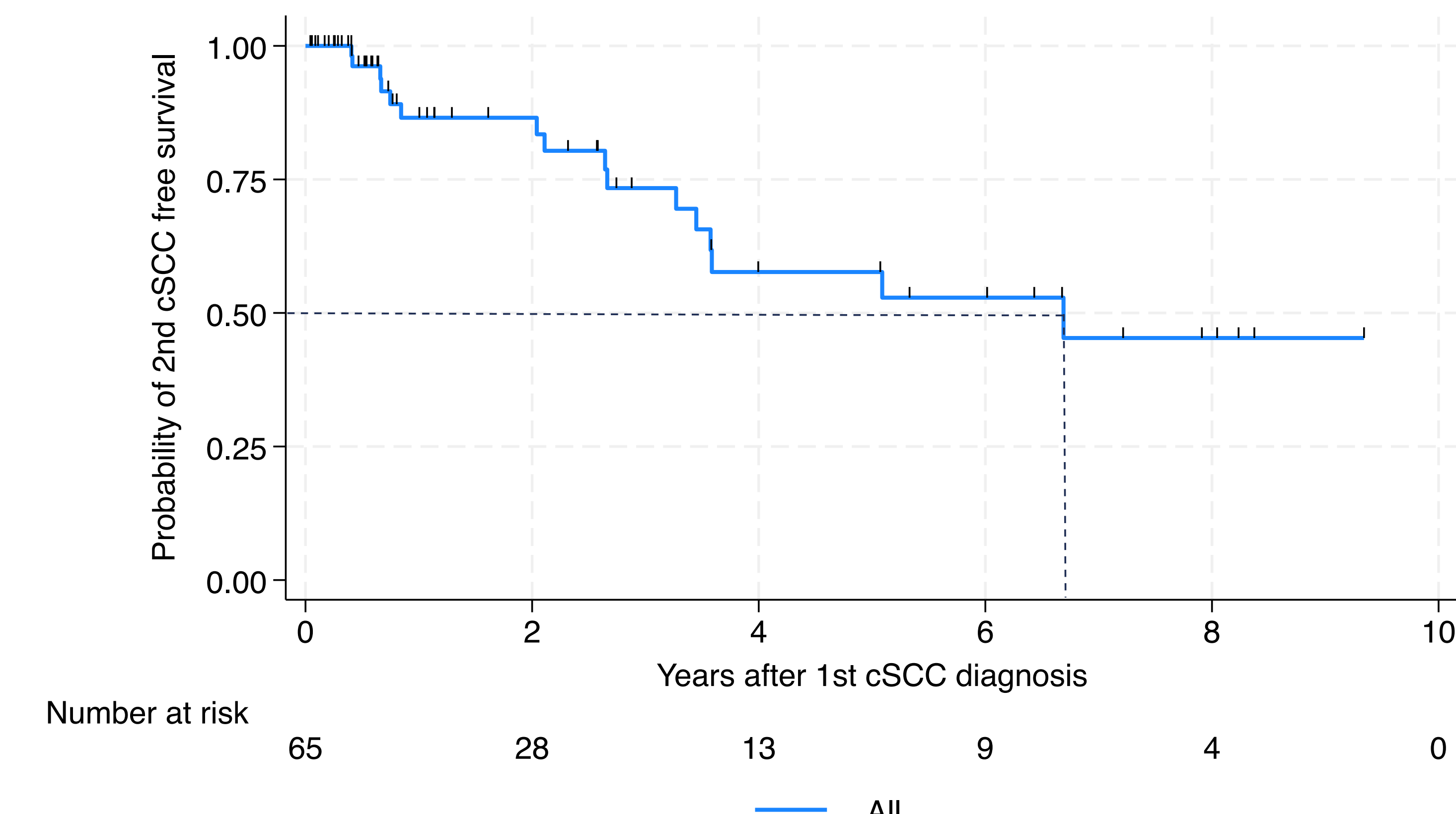


Figure 1. Kaplan Meier 2<sup>nd</sup> cSCC Free Survival Curves for All Hispanic Patients

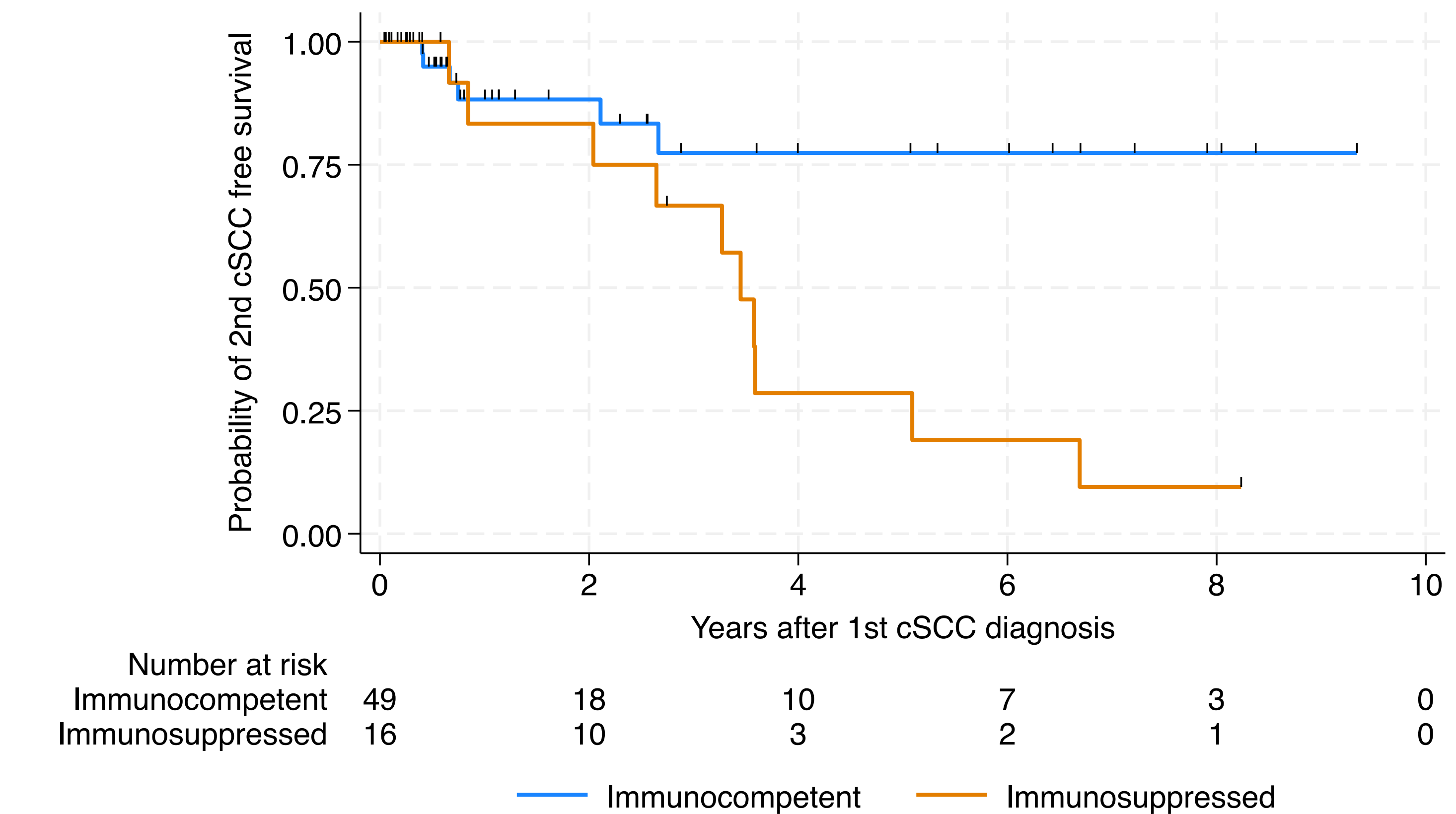


Figure 2. Kaplan Meier 2<sup>nd</sup> cSCC Free Curve for All Hispanic Patients Stratified by Immunosuppression Status

## DISCUSSION

- Sixteen (24.6%) Hispanic patients developed a 2<sup>nd</sup> cSCC. Most were male (10/16), English speakers (12/16), and identified as white (9/16).
- The average time to 2<sup>nd</sup> cSCC was 2.43 years, with 87.5% of second tumors occurring by 5 years.
- Ethnicity was significantly different between groups (with second SCC and without second cSCC), with no Hispanic Mexicans developing a 2<sup>nd</sup> cSCC.
- Immunosuppression status was significantly different between groups. Immunosuppressed Hispanic patients were 3.81 times more likely to develop a second cSCC than their non-immunosuppressed counterparts.
- Overall, many (49.2%) initial cSCCs were in-situ.

## CONCLUSION

- Given the high proportion of patients that developed a second primary cSCC and an average time to second cSCC of 2.43 years, we recommend at least yearly clinical follow-up for 5-10 years in Hispanic patients following first cSCC diagnosis.
- The AAD's current guidelines are applicable to Hispanic patients.