

Calculation of OPL Progression from Zhang et al (2012) Cohort

Objective: To estimate the “OPL_prog” parameter for the model (time for OPL to progress to stage I cancer). These estimates must reflect patient age, sex, smoking status, and LOH risk score.

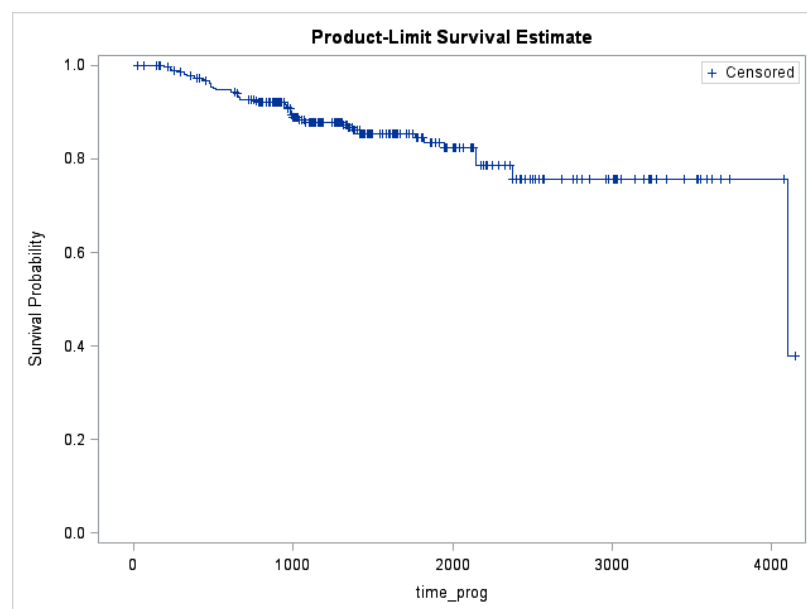
Data from 289 participants in the Zhang *et al* study[1] underwent secondary analysis. Demographic (age, sex, smoking status) and LOH risk score was identified for each participant, as well as time to confirmed progression from premalignant to invasive disease. LOH risk score was categorized, as in the Zhang *et al* study, as “high”, “medium”, or “low” risk based on trial protocol definitions. Twelve (12) participants with an unclassified risk score were excluded from the analysis, resulting in a final cohort size of 277.

Patient demographics

Variable (N = 277)		Number	SD/Percent
Age at recruitment		58.7	12.0
Sex	Male	152	58.5%
	Female	354	41.5%
Smoking History	Never smoker	75	27.1%
	Ever smoker	202	72.9%
LOH risk score	Low	100	36.1%
	Medium	54	19.5%
	High	123	44.4%

Survival Analysis

- Median survival in the participant cohort was 4103 days, and mean survival was 3423.4 (SE: 98.59). The clear majority (84.5%) did not progress to cancer within the observation period of the trial (i.e., were censored). Smoking status was significantly associated with time to progression, as was LOH risk score.



- Multivariate linear regression was performed on time-to-progression values, assuming a Weibull distribution. Age, sex, and LOH Risk Score were included as covariates. Outputs from the regression analysis are presented in the table.

Parameter			Estimate	SE	95% Confidence Limits		Pr > ChiSq
Intercept (β_0)			9.296	0.744	7.838	– 11.6878	<.0001
Sigma (σ)			0.801	0.106	0.618	– 1.4115	
Age			0.0013	0.010	-0.018	– 0.0208	0.8966
Sex	Male	Ref.					
	F		-0.080	0.257	-0.585	– 0.424	0.7547
Smoking	Never	Ref.					
	Ever		0.593	0.267	0.0695	– 1.116	0.0264
LOH Risk Score	Low	Ref.					
	Medium		-0.868	0.449	-2.015	– -0.483	0.0533
	High		-1.249	0.391	-1.749	– 0.0123	0.0014

1. Zhang L, Poh CF, Williams M, Laronde DM, Berean K, Gardner PJ, Jiang H, Wu L, Lee JJ, Rosin MP: **Loss of heterozygosity (LOH) profiles--validated risk predictors for progression to oral cancer.** *Cancer Prev Res (Phila)* 2012, **5**(9):1081-1089