Inclusion/Exclusion Diagram

Selection and Exclusion Criteria	Sample Size	Excluded
Head and Neck Cancer Cases	1612	-
Include oropharynx patients	1058	554
Exclude patients missing p16 status	637	421
Exclude patients missing smoking pack-years	547	90

Table 1S - Diagram of Study Population Selection for RTOG Head and Neck

Table 2S - Descriptive Statistics

Variable	Level	N = 547	%
Study number	0129	260	47.5
	0522	287	52.5
p16 status	Negative	145	26.5
	Positive	402	73.5
Gender	Male	479	87.6
	Female	68	12.4
T stage	T2	218	39.9
	T3	173	31.6
	T4	156	28.5
N stage	N0	35	6.4
	N1	61	11.2
	N2a	63	11.5
	N2b	199	36.4
	N2c	139	25.4
	N3	50	9.1
Age	44 and younger	42	7.7
	45-49	79	14.4
	50-54	121	22.1
	55-59	133	24.3
	60-64	102	18.6
	65-69	46	8.4
	70 and older	24	4.4
Smoking history (pack-years)	0	174	31.8
	>0, <=10	79	14.4
	>10, <=20	59	10.8
	>20, <=40	117	21.4
	>40	118	21.6

Table 3S - p16 comparisons

Covariate	Statistics	Level	p16 status		Parametric P-value*
			Negative N=145	Positive N=402	
Study number	N (Col %)	0129	73 (50.34)	187 (46.52)	0.429
	N (Col %)	0522	72 (49.66)	215 (53.48)	
Gender	N (Col %)	Male	120 (82.76)	359 (89.3)	**0.041**
	N (Col %)	Female	25 (17.24)	43 (10.7)	
T stage	N (Col %)	T2	44 (30.34)	174 (43.28)	**<.001**
	N (Col %)	T3	43 (29.66)	130 (32.34)	
	N (Col %)	T4	58 (40)	98 (24.38)	
N stage	N (Col %)	N0	11 (7.59)	24 (5.97)	0.159
	N (Col %)	N1	22 (15.17)	39 (9.7)	
	N (Col %)	N2a	13 (8.97)	50 (12.44)	
	N (Col %)	N2b	44 (30.34)	155 (38.56)	
	N (Col %)	N2c	43 (29.66)	96 (23.88)	
	N (Col %)	N3	12 (8.28)	38 (9.45)	
Age	N (Col %)	44 and younger	8 (5.52)	34 (8.46)	**0.035**
	N (Col %)	45-49	20 (13.79)	59 (14.68)	
	N (Col %)	50-54	21 (14.48)	100 (24.88)	
	N (Col %)	55-59	41 (28.28)	92 (22.89)	
	N (Col %)	60-64	28 (19.31)	74 (18.41)	
	N (Col %)	65-69	19 (13.1)	27 (6.72)	
	N (Col %)	70 and older	8 (5.52)	16 (3.98)	
Smoking history (pack-years)	N (Col %)	0	20 (13.79)	154 (38.31)	**<.001**
	N (Col %)	>0, <=10	19 (13.1)	60 (14.93)	
	N (Col %)	>10, <=20	10 (6.9)	49 (12.19)	
	N (Col %)	>20, <=40	41 (28.28)	76 (18.91)	
	N (Col %)	>40	55 (37.93)	63 (15.67)	

* The parametric p-value is calculated by chi-square test.