Differences in Predictors for Oral Tongue Squamous Cell Carcinoma Survival as Stratified by Age and Sex: A SEER Analysis

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ABSTRACT

INTRODUCTION

Recent epidemiological studies have noted the increasing incidence of head and neck cancer among young adults, particularly tongue and oropharyngeal neoplasms. The cause of this rise remains unclear; however, many mechanisms have been proposed including carcinogenic exposures, genetic predisposition or viral infections. In this study, we aim to compare differences in survival and prognosticators among men and women with oral tongue (OT) cancer younger than 40 years compared to those older than 40 years.

METHODS

Using the SEER database, appropriate cases were queried and selected in order to calculate summary statistics and survival trends for patients with a diagnosis of oral tongue cancer between January 1, 1973 and January 1, 2012. Site-specific codes were checked to ensure that primary sites were limited to the oral tongue; cases that did not originate within this subsite were excluded from the analysis. Patient demographic and clinical data, including histopathology, age, race, sex, primary site, treatments rendered (surgery and/or radiation), and survival (overall and disease-specific) were compiled.

Primary outcomes for the study included overall survival (OS), or time from initial treatment to death from any cause, and disease-specific survival (DSS), or time from initial treatment to death from OT SCC and malignancy-related causes. Kaplan-Meier curves based on OS and DSS were constructed and stratified by tumor stage, with differences evaluated by the log-rank test. Univariate and multivariate regression using the Cox proportional hazards model was used to evaluate covariates affecting OS and DSS. For the multivariate analysis, covariates were chosen based on significance on univariate analysis; surgical therapy as a covariate was added in account of its clinical significance. Statistical analysis was performed using SPSS 21 (IBM Corporation, Armonk, NY). A significance level of 0.05 was used for all tests.

RESULTS

A total of 526 cases of young female and 706 cases of young male OT SCC were identified out of 16,423 cases of OT SCC in the database and met inclusion criteria. The median OS of young male and female OT SCC were 248 and 468 months, respectively, while OS of OT SCC in men and women > 40 years older than were 57 and 75 months. Table 1 and 3 displays the demographic and survival data for the study population. On univariate and multivariate analysis (Tables 2 and 4), tumor stage was uniformly associated with worse OS and DSS (p < 0.05), with predicting improved OS and DSS in all groups except young females (p > 0.05).

CONCLUSIONS AND RELEVANCE: Despite being a relatively common head and neck malignancy, oral tongue SCC appears to present with relatively heterogeneous characteristics across different age and sex groups. Young female patients were found to have overall good prognosis. Tumor grade may play a role in prognosis in older patients.

REFERENCES

3. Differences in Predictors for Oral Tongue Squamous Cell Carcinoma Survival as Stratified by Age and Sex: A SEER Analysis. Thomas E. Heineman MD1; Edward C. Kuan, MD, MBA1; Jose E. Alonso, BS1; Karam W. Badran MD1; Maie St. John, MD, PhD1, 2, 3

Table 1. Demographics of cases compiled from the SEER registry

Table 2. Univariate analysis of predictors of overall and disease free survival stratified by age and gender

Table 3. Median, 2, and 5 and 10 year overall and disease-specific survival stratified by age and gender

Table 4. Multivariate analysis of overall and disease specific survival predictors including demographics, treatment, and clinicoepidemiologic data as a function of gender and age.

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