

## CORRELATION OF TREATMENT OUTCOME IN ORAL CAVITY SCC WITHIN DIFFERENT AGE GROUP

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### Introduction :

Among head and neck cancer oral cavity cancer have a higher incidence rate and it is more common in elderly male. However, there is by all accounts an adjustment in the statistic incline, with OSCCs progressively observed in younger individuals. This has prompted expanding pervasiveness of 'early-beginning Squamous Cell Carcinoma (SCC) which might be discretionarily characterized as SCC happening in people younger than 40 years of age. Oral cavity cancers in younger patients have recently increased, and particularly in female patients who do not consume alcohol or tobacco with incidence ranging from 0.4 to 6 % in recent article reach up to 11.7. It has even been suggested that oral cavity malignancy in younger patients may be a distinct disease entity, on the basis of different biological behavior and etiological factors. Some studies have demonstrated a superior result for the younger patient group, though others announced that tongue SCC in younger patients was related with a significant decrease in the overall survival.The aim of our study is to assess the prevalence of oral cavity SCC in our institute and the overall survival in different age group. Additionally the clinical, pathological and modality of treatment influencing the survival in young and elderly patients.

### Methods:

Squamous cell cancer (SCC) of the oral cavity was studied retrospectively in a single institute at King Fahad Specialist Hospital in Dammam, Saudi Arabia. From the year 2009 through the year 2020. Our study included a total of 131 individuals with oral cavity SCC. Patients with non-SCC, patients treated outside of our facility, and patients who have not been followed up on are excluded.. Statistical analysis were performed using IBM SPSS Statiscis version 23.0 .

### Result:

Only 107 patients out of a total of 133 met our inclusion criteria. St. deviation 14.78, mean age 57.35 (98-23) . The total number of patient equal or below age of 40 is 15 (14%) .There is no significant difference between the two age groups in terms of sex, smoking, radiation exposure, presence of second lry and tumour subsites, as shown in Table 1 ( clinical Factors ). The only statistically significant variable was family history, which we assumed was due to the small number of cases.. Tongue (50.5 percent) is the most prevalent subsite in both groups, followed by Buccal (22.4 percent ). Table 2 (Pathological variables) shows no significant differences between age groups, despite the fact that T2 and N0 are the most prevalent stages in both groups.

Table 2 : Clinical Factors

| Variables          | Age<= 40 ( 15) 14%                                                                                 | Age > 40 (92) 86%                                                                                                      | P value |
|--------------------|----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|---------|
| Sex                | 15 ( 9 male , 6 female)                                                                            | 92 ( 45 male , 47 female )                                                                                             | 0.303   |
| Family history     | 15 negative                                                                                        | 87 negative , 5 positive                                                                                               | 0.001   |
| Smoking            | 7 yes , 8 no                                                                                       | 52 yes , 40 no                                                                                                         | 0.33    |
| Radiation exposure | 15 no                                                                                              | 6 yes , 86 no                                                                                                          | 0.39    |
| Second lry         | 15 no                                                                                              | 11 yes (12.1%) , 81 no                                                                                                 | 0.17    |
| Subsites           | Tongue 9 (60%)<br>FOM 1 (6.7%)<br>Alveolar ridge 0<br>Buccal 4 (26.4%)<br>Palate 0<br>Lip 1 (6.7%) | Tongue 45 (48.9%)<br>FOM 8 (8.7%)<br>Alveolar ridge 12 (13%)<br>Buccal 20 (21.7%)<br>Palate 2 ( 2.2%)<br>Lip 5 (5.4 %) | 0.44    |

Table 2 : Pathological Factors

| Variables | Age<= 40 ( 15) 14%                                                                             | Age > 40 (92) 86%                                                                                  | P value |
|-----------|------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|---------|
| T stage   | T1 0<br>T2 4 (40%)<br>T3 5 (33.3%)<br>T4a 3 (20%)<br>T4b 1 (6.7%)                              | T1 14 (15.2%)<br>T2 25 (27.2%)<br>T3 25 (27.2%)<br>T4a 22 (23.9%)<br>T4b 6 (6.5%)                  | 0.27    |
| N stage   | N0 4 (26.7%)<br>N1 4 ( 26.7%)<br>N2a 3 ( 20 %)<br>N2b 2 (13.3%)<br>N2c 1 (6.7%)<br>N3 1 (6.7%) | N0 47 (51.1%)<br>N1 14 ( 15.2%)<br>N2a 15 ( 16.3 %)<br>N2b 8 (8.7%)<br>N2c 4 (6.5%)<br>N3 2 (2.2%) | 0.55    |
| M stage   | M0 12 (80%)<br>M1 3 (20%)                                                                      | M0 84 (91.3%)<br>M1 8 (8.7%)                                                                       | 0.13    |
| Margins   | Negative 11(73.3%)<br>Positive 0<br>N/A 4(26.7%)                                               | Negative 63(68.5%)<br>Positive 12 (13%)<br>N/A 17 (18.5%)                                          | 0.13    |

Table 3 :Treatment Factors

| Variables                  | Age<= 40 ( 15) 14%                                        | Age > 40 (92) 86%                                            | P value |
|----------------------------|-----------------------------------------------------------|--------------------------------------------------------------|---------|
| Surgery for primary tumour | 11 yes (73.3%)<br>4 no (26.7%)                            | 74 yes (80.4%)<br>18 no (19.6%)                              | 0.37    |
| Airway                     | Tracheostomy 9 (60%)                                      | 66 (71.7%)                                                   | 0.26    |
| Neck dissection            | No 4 (26.7%)<br>Unilateral 8 (53.2%)<br>Bilateral 3 (20%) | No 18 (19.6%)<br>Unilateral 46 (50%)<br>Bilateral 28 (30.4%) | 0.65    |
| Adjuvant treatment         | Radiation 8 (53.3%)<br>CRT 1 (7.6%)<br>Non 6 (40%)        | Radiation 34 (37%)<br>CRT 9 (9.8%)<br>Non 49 (53.3%)         | 0.49    |

### Result :

There was no significant difference between the two groups in table 3&4 (treatment Factors and Post-Treatment Status). Figure 1 shows that using Kaplan-Meier for survival analysis, there no statistical significance in 5-year survival.

Table 4 : Status Post Treatment

| Variables      | Age<= 40 ( 15) 14% | Age > 40 (92) 86% | P value |
|----------------|--------------------|-------------------|---------|
| Recurrence     | Yes 2 (13.3%)      | Yes 25(27.2%)     | 0.20    |
| Residual       | Yes 0              | Yes 6 (6.5%)      | 0.39    |
| Patient status | Alive 9 (60%)      | Alive 62 (67.4%)  | 0.38    |

Means and Medians for Survival Time

| age group             | Estimate | Std. Error | Mean <sup>a</sup>       |             | Estimate | Std. Error | Median                  |             |
|-----------------------|----------|------------|-------------------------|-------------|----------|------------|-------------------------|-------------|
|                       |          |            | 95% Confidence Interval |             |          |            | 95% Confidence Interval |             |
|                       |          |            | Lower Bound             | Upper Bound |          |            | Lower Bound             | Upper Bound |
| equal or less than 40 | 19.592   | 3.985      | 11.782                  | 27.403      | 24.000   | 10.205     | 3.999                   | 44.001      |
| more than 40          | 67.474   | 27.640     | 13.300                  | 121.647     | 31.000   | 2.336      | 26.421                  | 35.579      |
| Overall               | 63.370   | 25.463     | 13.463                  | 113.276     | 30.000   | 3.933      | 22.292                  | 37.708      |

a. Estimation is limited to the largest survival time if it is censored.

Overall Comparisons

|                                | Chi-Square | df | Sig. |
|--------------------------------|------------|----|------|
| Log Rank (Mantel-Cox)          | 3.352      | 1  | .067 |
| Breslow (Generalized Wilcoxon) | 3.171      | 1  | .075 |

Test of equality of survival distributions for the different levels of age group .

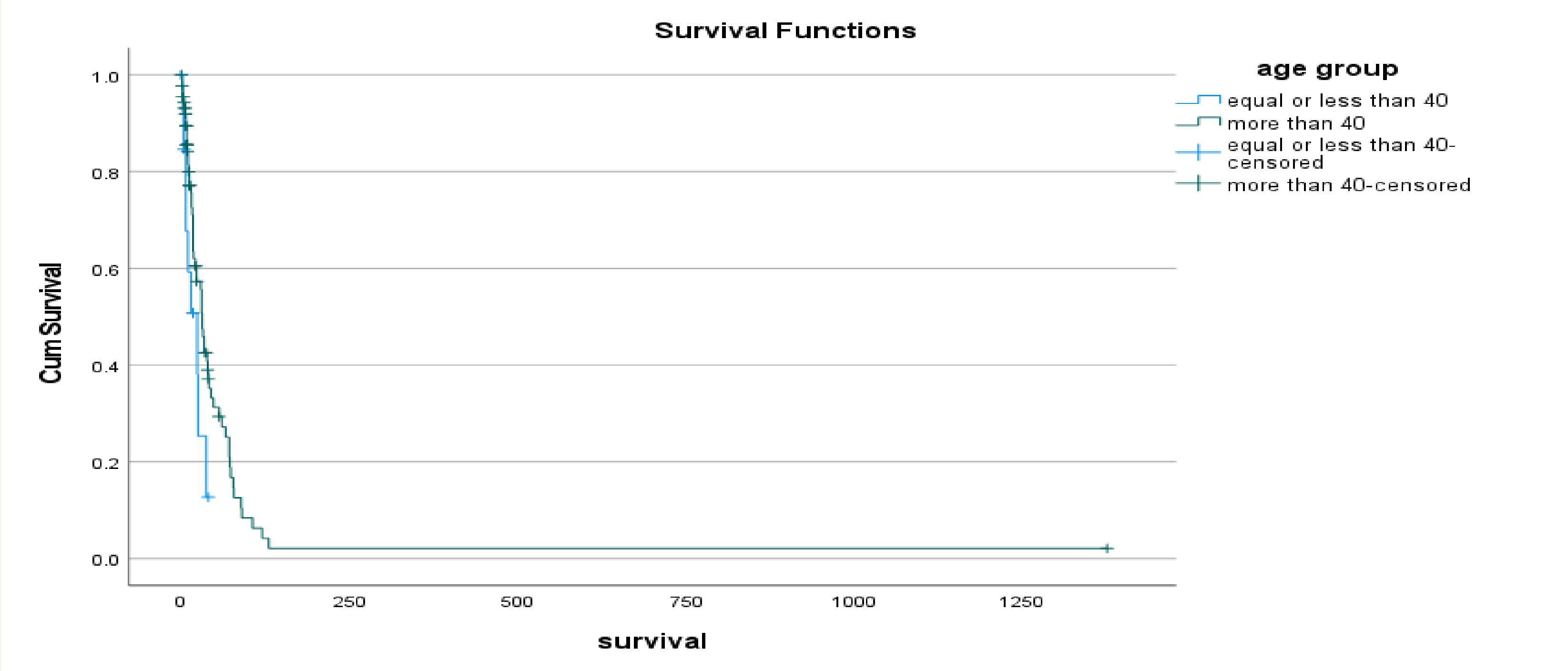


Figure 1 : Kaplan-Meier curves showing the comparison of overall survivi (OS; D–F) probabilities according to different age group. Log-rank test and berslow , P <0.05.

### Conclusion:

In our analysis, there was no significant difference in recurrence or overall survival between young and old patients. However, when compared to the most recent study, In our area, the incidence of oral cavity cancer in young patients is greater. Increase awareness of oral cavity SCC among Family physician, Maxillofacial surgeon and general ENT physician in young patient.

### References:

- Majchrzak E, Szybiak B, Wegner A, Pienkowski P, Pazdrowski J, Luczewski L, et al. Oral cavity and oropharyngeal squamous cell carcinoma in young adults: a review of the literature. Radiol Oncol. 2014;48(1):1-10.
- Kapila SN, Natarajan S, Boaz K. A Comparison of Clinicopathological Differences in Oral Squamous Cell Carcinoma in Patients Below and Above 40 Years of Age. J Clin Diagn Res. 2017;11(9):ZC46-ZC50.
- Zhang YY, Wang DC, Su JZ, Jia LF, Peng X, Yu GY. Clinicopathological characteristics and outcomes of squamous cell carcinoma of the tongue in different age groups. Head Neck. 2017;39(11):2276-82.
- Park JO, Sun DI, Cho KJ, Joo YH, Yoo HJ, Kim MS. Clinical outcome of squamous cell carcinoma of the tongue in young patients: a stage-matched comparative analysis. Clin Exp Otorhinolaryngol. 2010;3(3):161-5
- Kostrzewska-Poczekaj M, Gawecki W, Illmer J, Rydzanicz M, Gajecka M, Szyfter W, et al. Polymorphisms of DNA repair genes and risk of squamous cell carcinoma of the head and neck in young adults. Eur Arch Otorhinolaryngol. 2013;270(1):271-6.
- Jeon JH, Kim MG, Park JY, Lee JH, Kim MJ, Myoung H, et al. Analysis of the outcome of young age tongue squamous cell carcinoma. Maxillofac Plast Reconstr Surg. 2017;39(1):41.
- Santos-Silva AR, Ribeiro AC, Soubhia AM, Miyahara GI, Carlos R, Speight PM, et al. High incidences of DNA ploidy abnormalities in tongue squamous cell carcinoma of young patients: an international collaborative study. Histopathology. 2011;58(7):1127-35.