# ANALYSIS OF CERVICAL NODE METASTASIS IN ORAL CAVITY SQUAMOUS CELL CARCINOMA PATIENTS

Leonor Cruz e Silva[1]; José Cunha Coutinho [1]; Gonçalo Cunha Coutinho [1]; Ricardo São João[2,3]; Tiago Domingues [2]; Cecília Caldas [1]; Paulo Palmela [1]; Miguel Araújo Nobre[4,5]; Francisco Salvado [1,4]

[1] Stomatology University Clinic, Centro Hospital Universitário Lisboa Norte; [2] Department of Computer Science and Quantitative Methods, School of Management and Technology-Polytechnic Institute of Santarém; [3] CEAUL, Faculdade de Ciências, Universidade de Lisboa; [4] Faculdade de Medicina da Universidade de Lisboa; [5] Maló Clinic
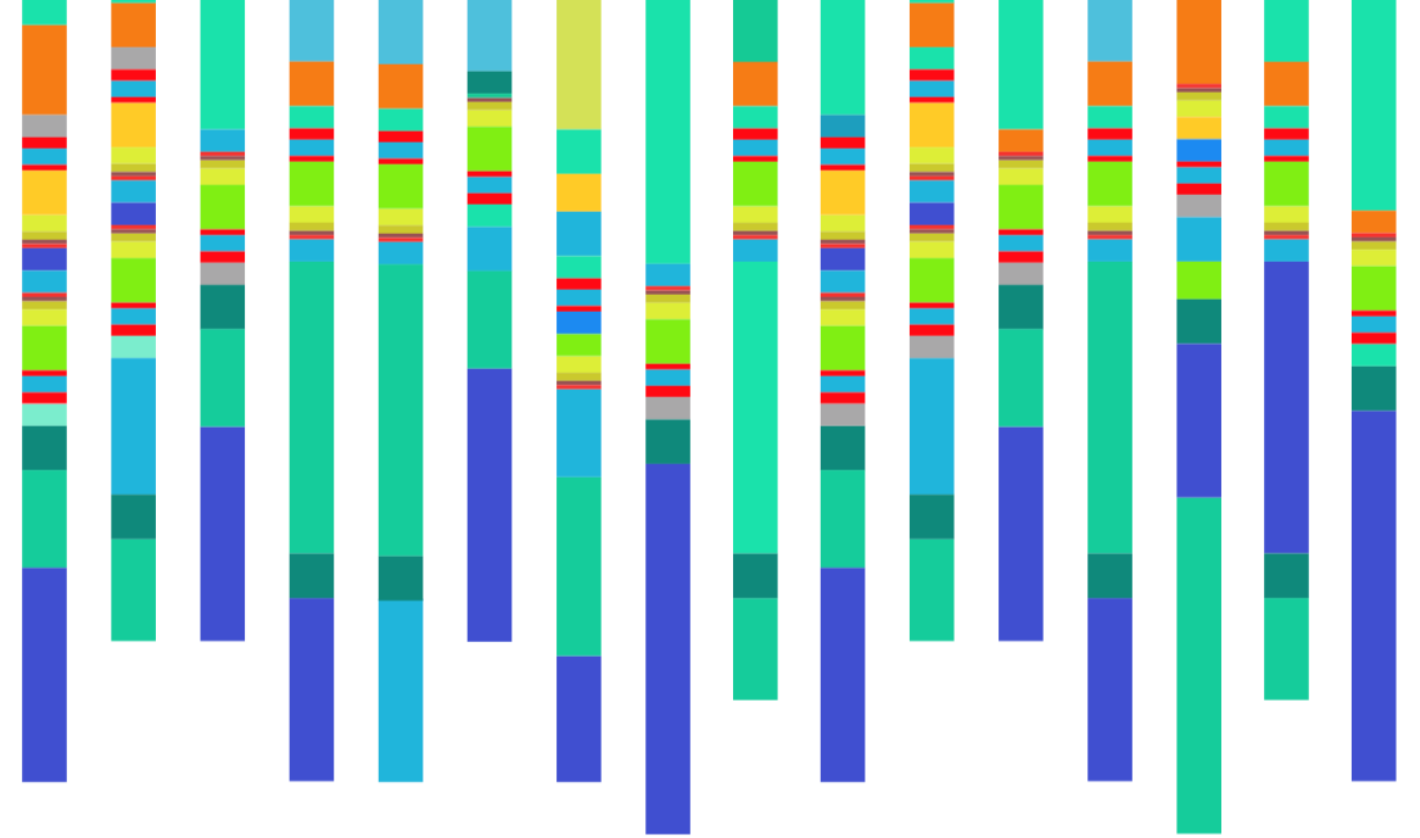
5th Statistics on Health Decision Making:
Personalized Medicine

June 1-2, 2023 | University of Aveiro

INTRODUCTION

ORAL CAVITY CANCER

- Sixteenth position worldwide
- Squamous Cell Carcinoma accounts for more than 90% of cases

| Buccal Mucosa | Floor of the Mouth | Anterior Tongue | Alveolar Ridges | Retromolar Trigone | Hard Palate | Inner Part of the Lips |

ALCOHOOL - TOBACCO

Deleterious chewing habits

ORAL CAVITY CANCER

PRESENCE OF LYMPHATIC METASTASIS IS THOUGHT TO BE THE MOST RELEVANT PROGNOSTIC FACTOR

Tumour Staging	5-year survical rate
Localized disease - stages I and II	80%
Locorregional disease - stages III, IVA and IVB	50%
Distant disease - stage IVC	25%
OVERALL SURVIVAL	**40-50%**

Different manifestations of oral cancer. Images from the Stomatology University Department of Centro Hospital Universitário Lisboa Norte - Multimedia Archive

ORAL CAVITY CANCER

Dissemination behaviour may be influenced by barriers tumour encounters

ORAL CAVITY CANCER

Therapeutic management of clinically node negative neck is defined by calculated risk of occult metastases or undetectable micro metastases, and primary subsite of cancer lesion may play a relevant role in this estimates.
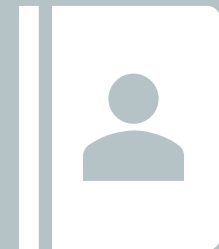
METHODS

METHODS

RETROSPECTIVE STUDY IN ORAL MEDICINE AND ONCOLOGY UNITY OF THE STOMATOLOGY DEPARTMENT OF CENTRO HOSPITALAR UNIVERSITÁRIO LISBOA NORTE

Patients diagnosed with Oral cavity Squamous Cell Carcinoma (OSCC)
January 2015 – April 2021

☑ Inclusion criteria: clinical charts with complete information
☒ Exclusion criteria: clinical charts with incomplete information

A convenience sample was considered and only patient charts were consulted, with personal data completely anonymised - informed consent was not collected.

METHODS

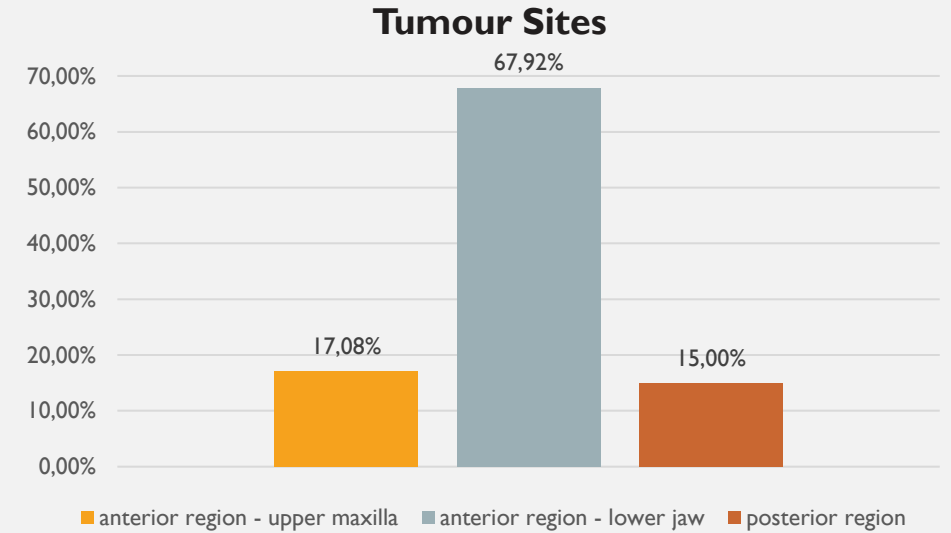## THREE GROUPS WERE DEFINED FOR ANALYSIS:

- <u>Anterior Region - Upper Maxilla</u>: upper lip, maxillary gingiva and alveolar ridge, upper vestibule, jugal mucosa, hard palate

- <u>Anterior Region - Lower Jaw</u>: lower lip, lingual border, lingual dorsum, lingual belly, floor of the mouth, mandibular gingiva and alveolar ridge, lower vestibule

- <u>Posterior Region:</u> retromolar trigone, oropharynx

RESULTS

RESULTS

Table 1 – Patients characteristics

Variable	
Sex, n(%)	87 (57,6%)
Male	64 (42,4%)
Female	63 (42.0)
Age (mean ± SD) oyears-old	65.39 ± 13.82
Smoking status, n(%)	
Never	60 (40.8)
Active	63 (42.9)
Ex-smoker	24 (16.3)
Alcohol status, n(%)	
Never	72 (49.3)
Active	66 (45.2)
Ex-consumer	8 (5.5)
Immunosuppressive conditions, n(%)	
HIV	4 (44.4)
Primary Immunodeficiency	1 (11.1)
Bone Marrow Transplant	2 (22.2)
Solid organ transplantation	2 (22.2)
Oncological background, n(%)	27 (18.8)
Referencing, n(%)	
Dentist	18 (12.3)
Stomatology consultation	12 (8.2)
Emergency Stomatology	45 (30.8)
FMG	51 (34.9)
Other	20 (13.7)

Tumour Sites

- anterior region - upper maxilla: 17,08%
- anterior region - lower jaw: 67,92%
- posterior region: 15,00%

The proportions of primary tumor location with cervical metastization were found to be distinct (Chi-square test for proportions, p-value<0.001)

Most patients are male, sexagenarian, smokers and drinkers.

RESULTS

↑Oral tumour sites with highest % of cases with clinical positive lymph nodes (cN+) by the time of diagnosis were inferior gingiva (72.7%, n=16), mouth floor (66.7%, n=22), oropharynx (64.7%, n=11), retromolar trigone (58%, n=11) and ventral tongue (57%, n=16).

↓Sites with fewer cases of cN+ were inferior lip (31%, n=4) and superior lip (n=0).

Similar results were found in our sample when operated tumors (pN+) were considered. Tumour sites with fewer pN+ cases were hard palate (25%, n=1), superior gingiva (16.7%, n=1) and inferior lip (0 out of 7 cases).

According to Fisher's exact test there is no statistically significant association (p-value=0.1506) between primary tumour site and cervical node disease (either cN+ or, whenever available, pN+)

CONCLUSIONS/DISCUSSION

Possible association between primary tumour site and involved lymph nodes

- In accordance to similar studies

Association was not statistically significant

Further studies in this field are required
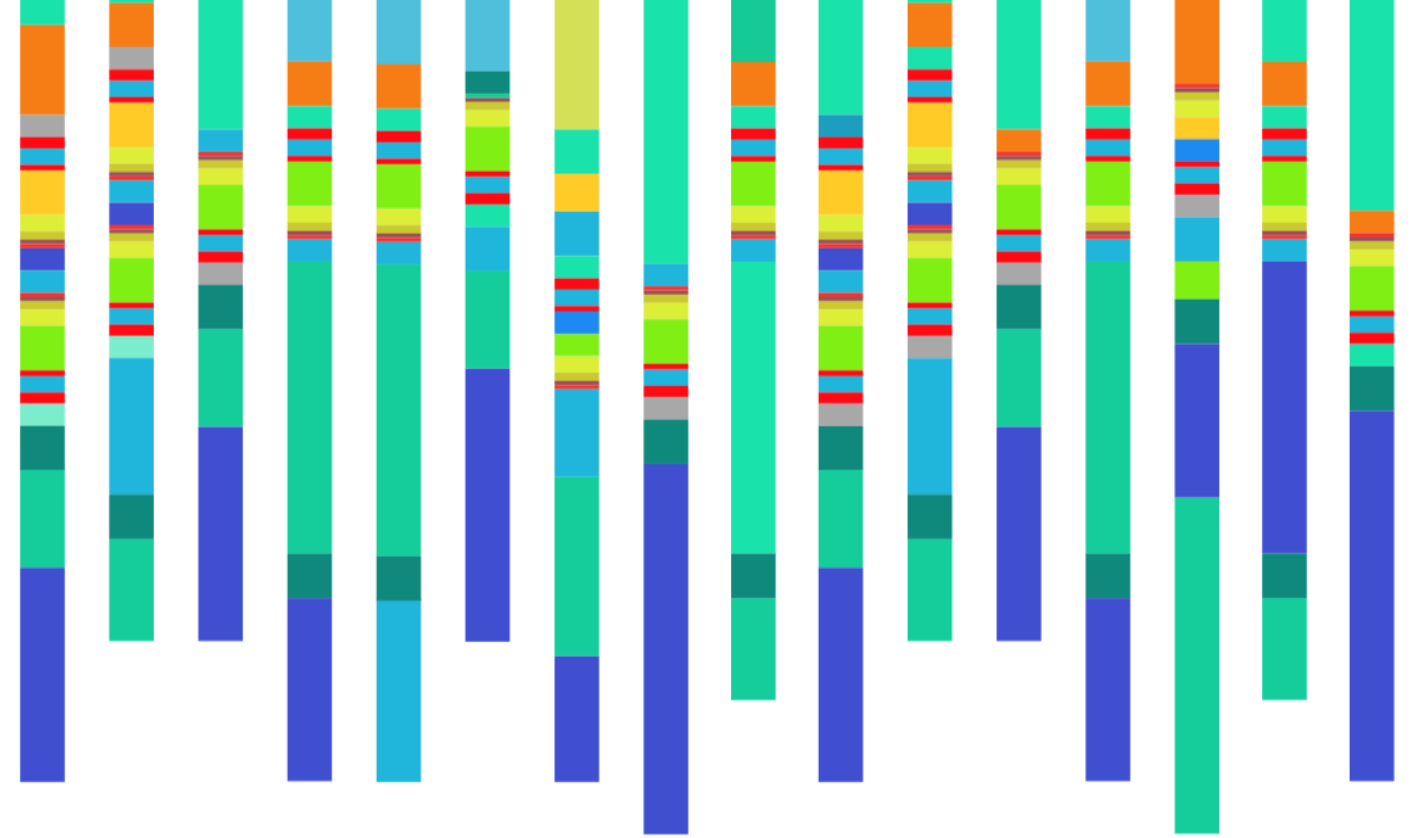
ACKNOWLEDGEMENTS

REFERENCES

- Chamoli A, Gosavi AS, Shirwadkar UP, Wangdale KV, Behera SK, Kurrey NK, et al. Overview of oral cavity squamous cell carcinoma: Risk factors, mechanisms, and diagnostics. Oral Oncology. outubro de 2021;121:105451. https://doi.org/10.1016/j.oraloncology.2021.105451

- Siriwardena BSMS, Karunathilaka HDNU, Kumarasiri PVR, Tilakaratne WM. Impact of Histological and Molecular Parameters on Prognosis of Oral Squamous Cell Carcinoma: Analysis of 290 Cases. Rhim T, editor. BioMed Research International. 14 de outubro de 2020;2020:1-13. https://doi.org/10.1155/2020/2059240

- Siriwardena BSM, Rasnayaka RMSG, Masood Y, Masood M, Kumarasiri PVR, Tilakaratne WM. Predictive model of oral cancer metastasis for different cancer sites and age groups. J Invest Clin Dent. maio de 2016;7(2):127-31.https://doi.org/10.1111/jicd.12145

- Bugshan A, Farooq I. Oral squamous cell carcinoma: metastasis, potentially associated malignant disorders, etiology and recent advancements in diagnosis. F1000Res. 2 de abril de 2020;9:229. https://doi.org/10.12688/ f1000research.22941.1

- Chia C, Key S, Hasan Z, Virk S, Riffat F. Systematic review and meta-analysis of cervical metastases in oral maxillary squamous cell carcinoma. Cancer Reports [Internet]. dezembro de 2021 [citado 21 de março de 2023];4(6). https:// doi.org/10.1002/cnr2.1410

- Abati S, Bramati C, Bondi S, Lissoni A, Trimarchi M. Oral Cancer and Precancer: A Narrative Review on the Relevance of Early Diagnosis. IJERPH. 8 de dezembro de 2020;17(24):9160.https://doi.org/10.3390/ ijerph17249160

- Toledo LM, Oliveira AS, Pinheiro RA, Leite AKN, Mello ES, Moyses RA, et al. Implication of the New AJCC PT Classification of SCC of the Lip Comparing With Other Oral Subsites. The Laryngoscope [Internet]. novembro de 2021 [citado 27 de março de 2023];131(11). https://doi.org/10.1002/lary.29596

- Anis R, Gaballah K. Oral cancer in the UAE: a multicenter, retrospective study. Libyan Journal of Medicine. janeiro de 2013;8(1):21782. https://doi.org/10.3402/ljm.v8i0.21782

- Freeman GH, Halton JH. Note on an exact treatment of contingency, goodness of fit and other problems of significance. Biometrika. junho de 1951;38(1-2):141-9. https://doi.org/10.1093/biomet/38.1-2.141

- R Core Team. R: A language and environment for statistical computing [Internet]. R Foundation for Statistical Computing, Vienna, Austria; 2021. Disponível em: https://www.R-project.org/

- Anwar N, Pervez S, Chundriger Q, Awan S, Moatter T, Ali TS. Oral cancer: Clinicopathological features and associated risk factors in a high risk population presenting to a major tertiary care center in Pakistan. Langevin SM, editor. PLoS ONE. 6 de agosto de 2020;15(8):e0236359. https://doi.org/10.1371/journal.pone.0236359

- Singh V, Dwivedi SN, Deo SVS. Ordinal logistic regression model describing factors associated with extent of nodal involvement in oral cancer patients and its prospective validation. BMC Med Res Methodol. dezembro de 2020;20(1):95.https://doi.org/10.1186/s12874-020-00985-1

- Sharma A, Kim JW, Paeng JY. Clinical analysis of neck node metastasis in oral cavity cancer. J Korean Assoc Oral Maxillofac Surg. 2018;44(6):282. https://doi.org/10.5125/jkaoms.2018.44.6.282

- Sundaram PS, Subramanyam P. Effectiveness of sentinel lymph node scintigraphy and intraoperative gamma probing with gold standard elective neck dissection in patients with N0 oral squamous cell cancers: Nuclear Medicine Communications. novembro de 2019;40(11):1138-47. https://doi.org/10.1097/MNM.0000000000001090

- Bota JP, Lyons AB, Carroll BT. Squamous Cell Carcinoma of the Lip-A Review of Squamous Cell Carcinogenesis of the Mucosal and Cutaneous Junction. Dermatol Surg. abril de 2017;43(4):494-506. https://doi.org/10.1097/ DSS.0000000000001020

ANALYSIS OF CERVICAL NODE METASTASIS IN ORAL CAVITY SQUAMOUS CELL CARCINOMA PATIENTS

THANK YOUR FOR YOUR

PPA: PRESENCE, PARTICIPATION & ATTENTION !

Any questions?

leonormcruzesilva@hotmail.com

5th Statistics on Health Decision Making:
Personalized Medicine

June 1-2, 2023 | University of Aveiro