

### DENTISTRY AND MAXILLOFACIAL SURGERY

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# Pre-invasive head and neck squamous precursors: screening, detection and biological assessment

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Head and Neck squamous carcinoma is broadly classified into conventional and oropharyngeal (HPV-associated) forms. Oropharyngeal squamous carcinoma originates from invaginated squamous epithelium of lymphoid-stromal sites (Base of tongue, tonsils, and adenoids) in younger male patients with no or low-risk factors. However, conventional squamous carcinoma arises in the squamous mucosal lining of the oral cavity, mobile tongue, and larynx. It typically afflicts older male patients with a protracted history of risk factors. In contrast to the HPV-associated carcinoma, conventionally squamous carcinoma is preceded by pre-malignant lesions defined clinically as leukoplakia (white plaque) and optically by progressive stages of hyperkeratotic dysplasias. These lesions, however, are not uncommon in the general population, and only a small subset of them progress to invasive carcinoma. Early screening for potentially progressive dysplasia is a subject of intense investigation. The presentation will discuss current pathological characterization and advances in biomarkers discovery for early detection and management.

#### **Recent Publications:**

- 1. Renata Ferrarotto, Moran Amit, Priyadharsini Nagarajan, M. Laura Rubin, Ying Yuan, Diana Bell, Adel K. El-Naggar, Jason M. Johnson, William H. Morrison, David I. Rosenthal, Bonnie S. Glisson, Faye M. Johnson, Charles Lu, Frank E. Mott, Bita Esmaeli, Eduardo M. Diaz, Paul W. Gidley, Ryan P. Goepfert, Carol M. Lewis, Randal S. Weber, Jennifer A. Wargo, Sreyashi Basu, Fei Duan, Shalini S. Yadav, Padmanee Sharma, James P. Allison, Jeffrey N. Myers, Neil D. Gross; Pilot Phase II Trial of Neoadjuvant Immunotherapy in Locoregionally Advanced, Resectable Cutaneous Squamous Cell Carcinoma of the Head and Neck. Clin Cancer Res 15 August 2021; 27 (16): 4557–4565. https://doi.org/10.1158/1078-0432.CCR-21-0585
- 2. Tatiana V. Karpinets, Yoshitsugu Mitani, Bin Liu, Jianhua Zhang, Kristen B. Pytynia, Linton D. Sellen, Danice T. Karagiannis, Renata Ferrarotto, Andrew P. Futreal, Adel K. El-Naggar; Whole-Genome Sequencing of Common Salivary Gland Carcinomas: Subtype-Restricted and Shared Genetic Alterations. Clin Cancer Res 15 July 2021; 27 (14): 3960–3969. https://doi.org/10.1158/1078-0432.CCR-20-4071
- 3. Amit, M, Liu, C, Mansour, J, Gleber-Netto, FO, Tam, S, Baruch, EN, Aashiq, M, El-Naggar, AK, Moreno, AC, Rosenthal, DI, Glisson, BS, Ferrarotto, R, Wong, MK, Tsai, K, Flores, ER, Migden, MR, Silverman, DA, Li, G, Khanna, A, Goepfert, RP, Nagarajan, P, Weber, RS, Myers, JN, Gross, ND. Elective neck dissection versus observation in patients with head and neck cutaneous squamous cell carcinoma. Cancer. 2021. https://doi.org/10.1002/cncr.33773
- 4. Lee DY, Brayer KJ, Mitani Y, Burns EA, Rao PH, Bell D, Williams MD, Ferrarotto R, Pytynia KB, El-Naggar AK, Ness SA. Oncogenic Orphan Nuclear Receptor NR4A3 Interacts and Cooperates with MYB in Acinic Cell Carcinoma. Cancers. 2020; 12(9):2433. https://doi.org/10.3390/cancers12092433
- 5. Sousa, LG, Wang, K, Torman, D, Binks, BJ, Rubin, ML, Andersen, CR, Lewis, WE, Rivera, MJ, Kaya, D, El-Naggar, AK, Hanna, EY, Esmaeli, B, Frank, SJ, Bell, D, Glisson, BS, Rodon, J, Meric-Bernstam, F, Lee, JJ, Ferrarotto, R. Treatment patterns and outcomes of palliative systemic therapy in patients with salivary duct carcinoma and adenocarcinoma, not otherwise specified. Cancer. 2022. https://doi.org/10.1002/cncr.33968



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#### **Biography**

El-Naggar is a Kathrin O' Connor endowed professor of Head and Neck Pathology at the University of Texas M.D. Anderson Cancer Center. El-Naggar is a Senior Head and Neck Pathologist and the director of the subspecialty fellowship-training program at The University of Texas M.D. Anderson Cancer Center. His clinical and research interests are centered on the optimization of the clinicopathologic assessment, genomic characterization biomarker discovery, and integration of patients with mucosal, thyroid, parathyroid and salivary gland malignancies

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