Title:
Unique Epidemiologic Features of Esophageal Squamous Dysplasia: A Retrospective Single Institution Study

Authors:
Joseph S. Kim, DO, Emma E. Furth, MD, Kester K. Haye, MD, PhD, Danielle Fortuna, MD
Department of Pathology and Laboratory Medicine, Hospital of the University of Pennsylvania, Philadelphia, PA

Introduction:
Squamous cell carcinoma (SCC) is the most common esophageal primary tumor worldwide. On the contrary, SCC and its precursor lesion, esophageal squamous dysplasia (ESD), are uncommon in western countries and North America, with smoking and heavy alcohol (EtOH) use being the significant risk factors. Given the influence of geography on the prevalence of SCC, we hypothesize that there may be unique risk factors in the Northeastern United States population compared to worldwide factors. Our retrospective study focuses on ESD, the premalignant condition, examining known risk factors at our institution.

Methods:
Patients diagnosed/followed with ESD during 2006-19 were identified from pathology database. Among patients who had an initial esophagogastroduodenoscopy (EGD) finding suspicious for SCC and confirmed by histology were excluded. Demographics, social and medical history (hx), EGD reports, and pathology reports were reviewed. We evaluated subgroups of risk factors. Fisher’s exact tests were used to test associations between two or more variables.

Results:
Study included 37 patients. Mean age at initial EGD biopsy was 66.8 years (range: 42-94 years); 56.8% (21/37) were female. By endoscopy, the most common finding was erythema followed by friability and nodularity. 45.9% had at least one recurrent ESD in subsequent biopsies, and 35.1% were eventually diagnosed with SCC. 83.3% showed high grade ESD on initial biopsy. Smoking [current, former, or never (NS)] and EtOH hx [heavy, light/moderate, or no] showed no significant association (p=0.38). Majority were either former or NS (72.9%); 34.3% were NS. In NS, 91.7% (11/12) were female, 50.0% did not consume EtOH, and 50.0% had concurrent Barrett esophagus (compared to 17.4% of remainder (4/23), not significant (p=0.059)). 33.3% later developed SCC. Also in NS, 50% had a personal hx of cancer and reported no family hx of head and neck (H&N) or esophageal cancer.

Conclusion:
In our institution, while some data is consistent with population data (i.e. EGD distribution, appearance), our study cohort is mostly women and within it is a unique subgroup lacking classical strong risk factors. This subset of NS is mostly women with no to moderate alcohol intake and lacking a strong family hx of H&N/esophageal cancer. Our data emphasizes that not all predisposing factors have been elucidated in ESD. Our findings may offer a unique opportunity to further the understanding of SCC pathogenesis.