Oral Cancer Risk Factors

Linda M Kaste, DDS, MS, PhD
Diplomate, American Board of Dental Public Health
Professor, University of Illinois at Chicago College of Dentistry
Objective and Content

Objective:
• The session attendees will be able to: discuss updates about risk factors including subsite specific associations in the United States

Meta-analyses:
• Traditional risk factors for oral cavity (OCC) and oropharyngeal (OPC) cancers
• HPV

INHANCE pooled data
Methods

• Targeted literature review
  – Published January 1995 – March 2016
  – English
  – If at least one clinical trial was from the US

• MeSH terms
  – Behavior, risk
  – Risk reduction behavior
  – Risk factors
  – Risk assessment

• 12 identified with statistical significance
• Tobacco (smoking)
  – No meta-analyses
  – Often included as an adjustment factor
• Most frequently assessed, 2 each
  – Alcohol
  – Diet
  – HPV
  – Smokeless tobacco

OR

Alcohol Diabetes Fruit Veg Proc Meats HPV Perio SLT SES Tea

Low 2 3 4 High

• 7 identified
• Most frequently assessed with 2 was Alcohol
• Only one factor preventive = Coffee
• Particularly high risks
  [note scale on next slide compared to 6 on previous slide]
  – Heavy alcohol drinking
  – HPV
  – Smoking tobacco
  – Smokeless tobacco

[Graph showing OR values for different factors including Alcohol, Coffee, Proc Meat, HPV, Smoking Tobacco, and SLT, with categories Low, 2, 3, 4, and High]
INHANCE
International Head And Neck Cancer Epidemiology Consortium

Additional Insight on Risk Factors
INHANCE

• International Head and Neck Cancer Epidemiology (INHANCE) Consortium
• [http://www.inhance.utah.edu/](http://www.inhance.utah.edu/)
• Established in 2004
• Collectively:
  26,000+ cases
  34,000+ controls
• Conducted in various regions of the world

27 papers
• 8: Diet
• 5: Smoking Tobacco/Smoking Tobacco & Alcohol
• 4: Height/BMI
• 1: Age, Alcohol, Coffee, Diabetes, Family History, Marijuana, Mouthwash, Recreational Activity, Sex Behaviors, and SES

OCC = Oral Cavity Cancer
OPC = Oropharyngeal Cancer
P = Cancer of the Pharynx
H&N = Cancer of the Head and Neck
OCPC = Oral Cavity and Pharynx Cancer
BOT = Cancer at the Base of Tongue
INHANCE Height & BMI

- Male per +10cm
- Female per +10cm
- BMI <18.5
- Male BMI <18.5
- Female BMI <18.5
- BMI 25.0-29.9
- BMI >30
- BMI >40

OR

Legend:
- OCC
- OPC
- P
- H&N
INHANCE Tobacco

Bar chart showing OR values for various factors in relation to tobacco use. The x-axis represents different categories such as 'Never Drink/Ever Smoke', '2nd Hand Home', '2nd Hand Work NSND', 'Quit tobacco NSND', 'Cigar/Cigarette Never', 'Pipe/Cigarette Never', '0-3 CPD', '3-5 CPD', 'ND 3-5 CPD', 'ND 5-10 CPD'. The y-axis represents the Odds Ratio (OR) ranging from 0 to 4.5. The chart includes categories for 'OCC', 'OPC', 'P', and 'H&N'.
INHANCE
Exclusive/Joint Tobacco Smoking

H&N

OR

Cigarette, Cigar, Pipe
Cigarette, Cigar
Cigarette, Pipe
Pipe Only
Cigarette Only
Summary of Risk Factors

• Many factors associated with > risk of OC
  – HPV and sexual behaviors of great concern
• Tobacco exposure remains a major factor
  – Albeit smoking not a focus of recent OCC meta-analysis
• Few factors associated with < risk of OC
  – Importance of dietary factors and wellness
• Site matters
• Genetics and genetic interactions with etiological agents will bring further perspectives for improving early detection and prevention
Reference

Prevalence of HPV in Adults Aged 18-69
United States, 2011-2014 (NHANES)

Prevalence of HPV in Adults Aged 18-69
United States, 2011-2014 (NHANES)

Any Genital HPV (%)

High-risk Genital HPV (%)

Thank you!