BEHAVIORAL RISK FACTORS OF HUMAN PAPILLOMAVIRUS (HPV) RELATED OROPHARYNGEAL SQUAMOUS CELL CARCINOMA (OPSCC)

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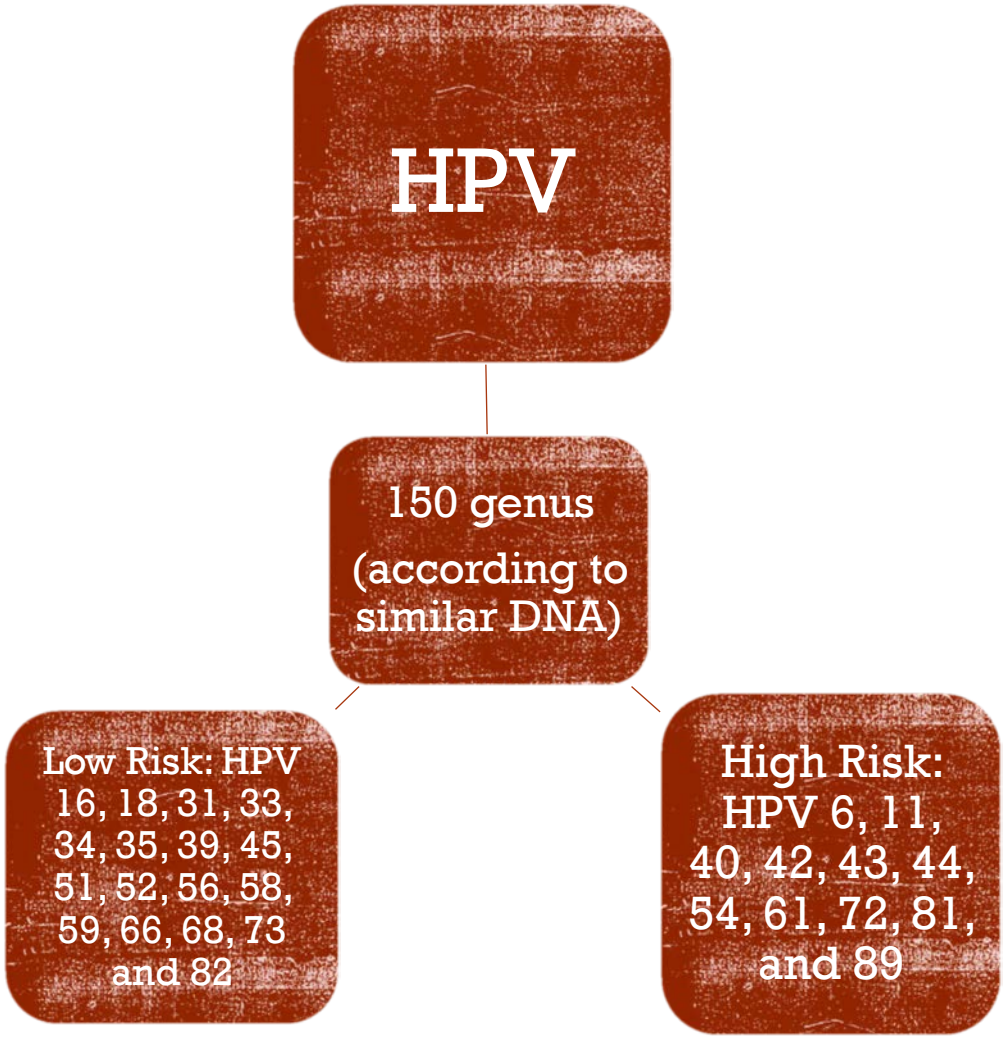
BACKGROUND

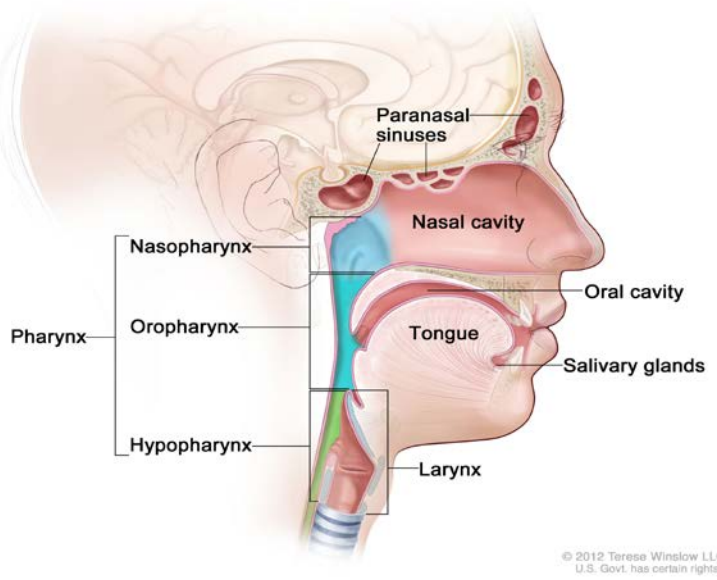
- Human Papilloma Virus → head and neck cancer
- Sixth most common
- 150 types of viruses
- Classification:
  - ✧ Similarities in DNA sequence:
    i. mucosal (α genus)
      - ✧ high risk
      - ✧ low risk

    ii. cutaneous (β genus)



BACKGROUND

- HPV – first recognized in 1983
- HPV-16 and 18 strains → head and neck cancer
- HPV-OPSCC → clinical characteristics
- Most common sites:
  - ✧Lingual and
  - ✧Palatal tonsils
- Histopathology – varies according to locations



EPIDEMIOLOGY

- Global Incidence - 400,000
  - Mortality -223,000 deaths (International Agency for Research on Cancer – IARC)

- U.S. Incidence - 49,670
  - Mortality - 9,700 (American Cancer Society)

- HPV-16 related OPSCC incidence increasing:
  - Younger adults in USA, Australia, certain European countries*

*Ferley J, Shin HR, Bray F, Forman D, Mathers C, Parkin DM. Estimates of worldwide burden of cancer in 2008. Int J Cancer 2010; 127:2893-2917

SUSCEPTIBLE GROUPS

- 18 – 70 year olds
- Males
- Multiple sex partners
- Consumers of:
  - tobacco
  - alcohol

AIMS

- Assess the distribution of HPV-OPSCC in different subgroups of the population

- Investigate the risk factors for HPV related OPSCC

METHODS

- Secondary analysis of 2011–12 NHANES Data
- Study sample = 5000
- Inclusion: 30 – 69 year olds
- Exclusion: <30 year olds
- Dependent variable: HPV related OPSCC

METHODS: OTHER VARIABLES

- Demographics
- Dental visits
- Oral cancer examination
- Smoking and alcohol habits
- Sexual partners/year

STATISTICAL ANALYSIS

- Descriptive

- Analytic:
  - Bivariate: Chi square, t-tests
  - Multivariate: ANOVA, Logistic regression

RESULTS: BIVARIATE

Distribution of HPV-OPSCC by sociodemographic factors (N=4566)			
	HPV Oral Cancer		
Variables	**Positive**	**Negative**	**p-value** *<0.05
Gender			
Females	488 (10.7)	1839 (40.5)	0.041*
Males	411 (9)	1807 (39.8)	
Age, mean (sd)	55.23 (±14.57)	54.03 (±15.11)	0.029*

RESULTS: BIVARIATE

Association between HPV-OPSCC and Behavioral Factors (N=4566)			
	HPV Oral Cancer		
Variables	**Positive**	**Negative**	**p-value** *<0.05
Oral Cancer Exam			
Past year	572 (49.3)	163 (14.1)	0.227
1-3 years ago	186 (16)	50 (4.3)	
3 + years ago	135 (11.6)	54 (4.7)	0.058*
Alcohol Use, mean (sd)	66.34 (±102.6)	51.3 (±95.12)	0.000*

RESULTS: BIVARIATE

Association between HPV-OPSCC and Behavioral Factors (N=4566)			
	HPV Oral Cancer		
Variables	**Positive**	**Negative**	**p-value** *<0.05
Multiple Sex Partners			
Yes	40 (2.2)	175 (9.7)	0.435
No	334 (18.4)	1264 (69.7)	
Smoking Habits			
Yes	138 (6.7)	737 (35.9)	0.001*
No	257 (12.5)	922 (44.9)	

RESULTS: MULTIVARIATE

Logistic Regression model for HPV-OPSCC and Risk Factors (N= 4566)		
c = 0.65	**Coefficient**	**p-value** *< 0.005
Oral Cancer Examination		
Past Year	2.37 (1.29 – 4.37)	0.005*
1-3 years	2.17 (1.02 – 4.59)	0.043*
3 or more years	**Ref**	
Multiple Sex Partners	1.15 (0.330 – 4.04)	0.821
Smoking habits	1.98 (1.08 – 3.63)	0.026*
Alcohol use	0.99 (0.99 – 1.00)	0.497

Model was adjusted for age, gender, race, income, and education

LIMITATIONS

- Cross-sectional study; no temporal relationship
  - ➔no causality

- Potential Biases:
  - ✧Reporting
  - ✧Recall

CONCLUSIONS

- The overall prevalence of HPV-OPSCC was 19.8%
- The distribution was more common among:
  - ✧Females
  - ✧Smokers
  - ✧Alcohol consumers
- Relatively recent oral cancer screening had a significant association

RECOMMENDATIONS

- Health promotion efforts → to avoid existing and new risk factors (smoking, alcohol consumption)

- Increase awareness, particularly among adolescents

- Regular oral cancer screening is recommended

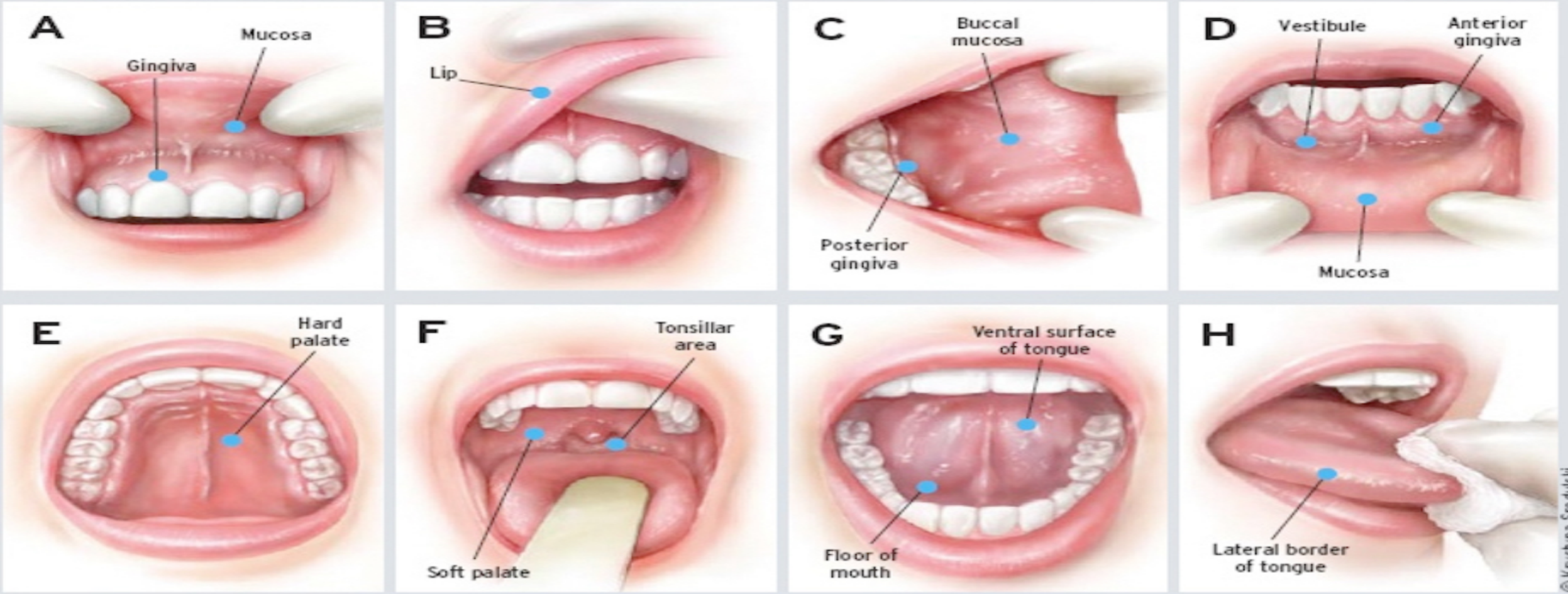


FIGURE 1. A brief screen for oral cancer includes this eight-step examination of the inside of the mouth.

http://www.encognitive.com/files/images/oral-cancer-screening-detection-examination.jpg

Questions??