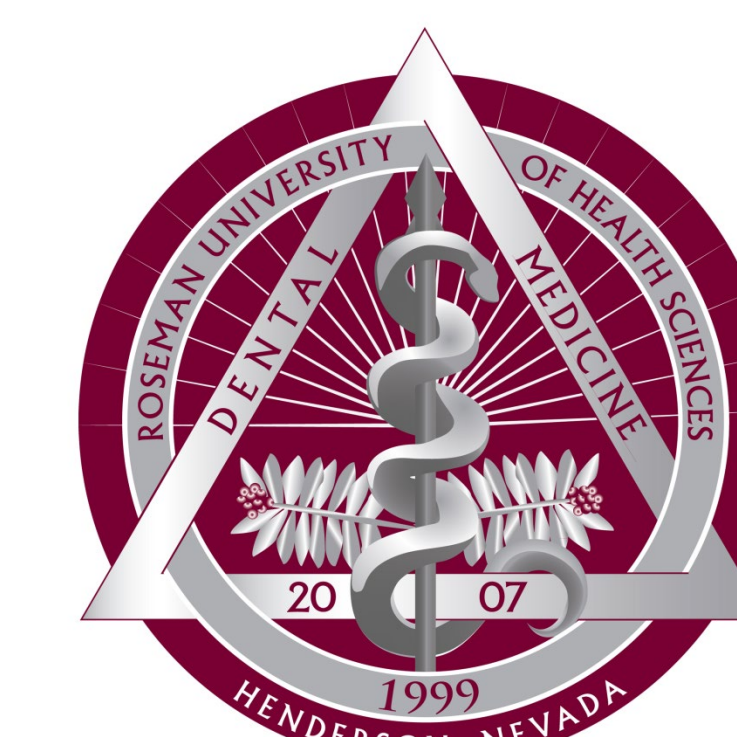# Oral Potentially Malignant Disorders Prevalence in the Orthodontic Clinic

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INTRODUCTION

Detection and adequate management of oral cancer at early stages has a 5-year survival rate of about 85%, as compared to 65% for cases with regional spread and 39% for late-stage disease.[1,2] Overall survival of 60%, points towards late detection of oral cancers in USA.[3] Oral potentially malignant disorders (OPMD) can be detected in oral cavity ten years or earlier than oral cancer. The term oral potentially malignant disorders (OPMD) is used to describe lesions associated with an increased risk of development into oral cancer compared to the healthy mucosa.[4] OPMD have not been studied adequately in the United States especially during the last two to three decades. OPMDs clinically present as erythroplakia, leukoplakia, lichen planus, submucous fibrosis, or suspicious forms of candidiasis.[6] The detection and follow-up of OPMD provide great value to detect early forms of cancer. No information is available on association of OPMDs with the newer epidemic of E-Cigarette use in USA. With the current use of E-Cigarettes (vaping) on the rise amongst the youth, the detection of OPMD among young should be an important consideration.[7] The orthodontic clinic offers a unique setting to conduct a study on OPMDs..
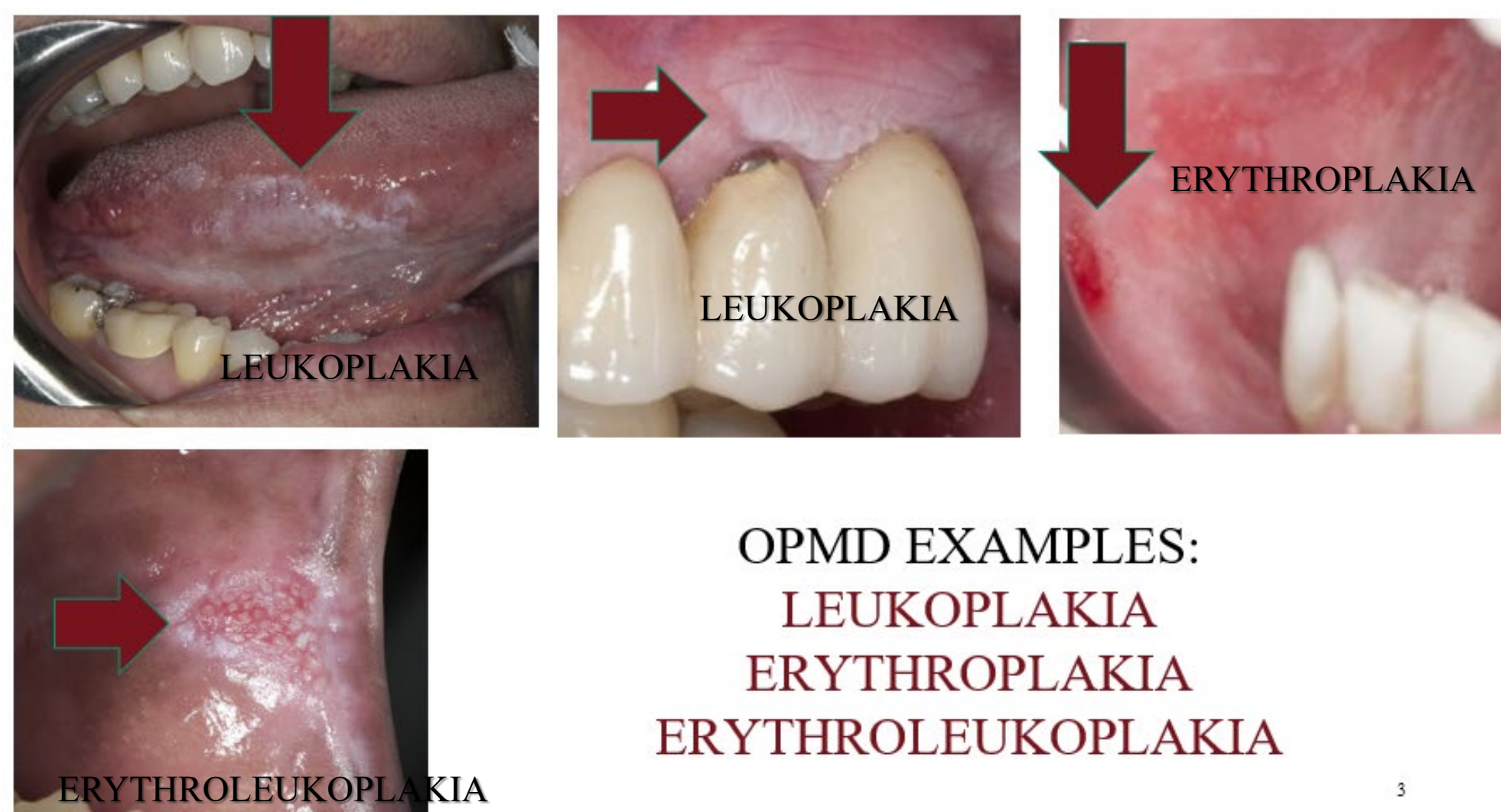
OPMD EXAMPLES:
LEUKOPLAKIA
ERYTHROPLAKIA
ERYTHROLEUKOPLAKIA

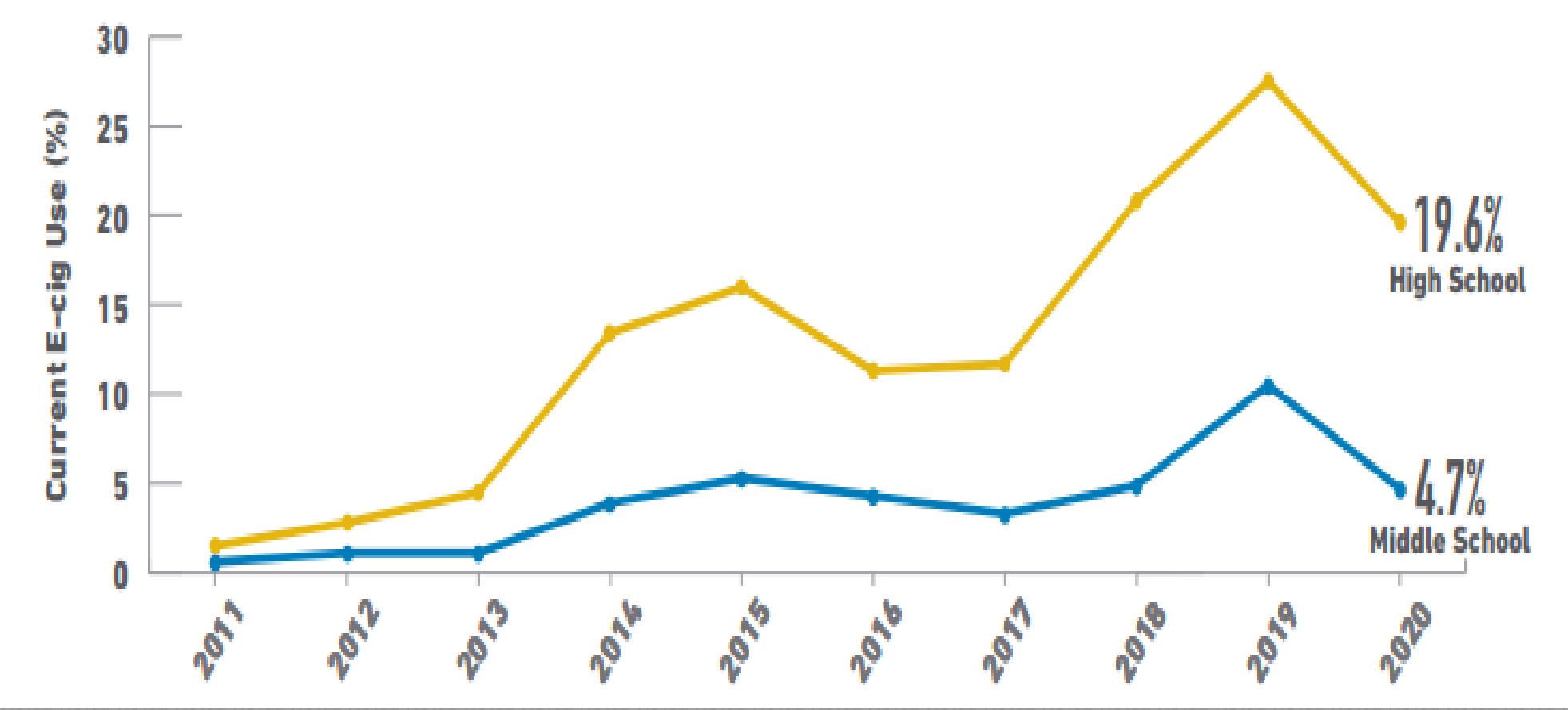Figure 1: OPMD Clinical Examples Adapted from Gupta, et al.[5]

Figure 2: E-Cigarette Use Amongst High Schoolers and Middle Schoolers Adapted from the CDC

METHODS

Cross-sectional study
The study will be conducted in an orthodontic residency clinic. About 1,000 patients (60% teenagers) are expected to be enrolled in the study. Orthodontic residents are licensed dentists and will be retrained to conduct an oral examination for the presence of OPMDs. The collected clinical information will include documentation of the number of lesions, location, scrapability, potential local etiology, pain, and size. All lesions will be photographed. Patients will be asked to complete a tobacco questionnaire on tobacco use after obtaining informed consent and assent. Any observed lesion will be followed and referred for management as per recent guidelines by American Dental Association

- Inclusion criteria: Patients of record and patients seeking treatment
- Exclusion criteria: Patients 10 years old or younger. Patients with craniofacial abnormalities.

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OBJECTIVES

1. To assess the prevalence of OPMDs among patients in the orthodontic clinic, and
2. To understand association of OPMDs with the use of Tobacco in Various modalities including E-Cigarette

PROPOSED ANALYSIS

1. Data will be analyzed using SPSS Version 27 Statistical Software.
2. Prevalence of OPMDs will be calculated.
3. Association of OPMDs with Tobacco and other characteristics (age, gender, etc.) via the Chi Square test.
4. ANOVA to check association of continuous values (like values duration of smoking) with variable of more than 2 categories (like age-group).

STUDY BENEFITS & IMPLICATIONS

The study will demonstrate importance and feasibility of routine screening for oral cancer and precancer at younger ages in orthodontic clinics. Insight towards the association of E-Cigarettes and OPMDs.
Education with accurate information will help in preparing common education strategies in addressing the public health epidemic.
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RESULTS

Expected Results: Prevalence of 2 to 4%, as seen in the global range of OPMDs, is anticipated. Lifestyle factors, including the use of tobacco products, show an association with OPMDs. We expect an association between OPMDs and e-cigarette use. Data on prevalence of OPMD may help in highlighting the need for routine screening for oral cancers.

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