



Research Week 2020

Multimodal preoperative screening for recent nicotine and marijuana use in hip and knee arthroplasty patients at the Portland VA Medical Center

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Keywords

Surgical Outcomes, Cigarette, Nicotine Replacement Therapy (NRT), Prevalence, Smokerlyzer

Abstract

Background

Tobacco use is associated with increased post-operative complications and is often underreported by patients. Recent literature also suggests that cannabis use may be correlated with post-operative complications. The prevalence of tobacco has been reported as disproportionately high in the veteran population and little is known about the population's cannabis use. Traditional biochemical testing methods, including serum and urine cotinine assays, do not differentiate active smoking from nicotine replacement therapy (NRT), and total joint arthroplasty patients are not regularly screened for the use of cannabis. This study intends to determine the prevalence of cigarette smoking, nicotine replacement therapy (NRT), and cannabis use in the population and evaluate the effectiveness of a novel point-of-care carbon monoxide (CO) breath test to verify smoking status.

Methods

This is a single-institution, prospective cohort study of adult orthopaedic patients at the Portland VA Medical Center to implement and evaluate a point-of-care CO breath test, the Smokerlyzer® Micro EC50, for pre-operative smoking status verification. Patients who were indicated for surgery were offered inclusion. Self-reported cigarette, cannabis, and nicotine replacement therapy (NRT) use was obtained pre-operatively and cigarette smoking status was verified by serum cotinine levels and exhaled CO levels. Prevalence was calculated as the number of patients who reported use compared to the overall population (69 patients).

Discussion

Preliminary data from 69 veterans undergoing elective orthopaedic surgery showed a prevalence of current cigarette smoking of 9/69 (13%). The prevalence for cannabis, e-cigarette, and nicotine replacement therapy use was calculated as 14/69 (20%), 2/69 (3%), and 2/69 (3%) respectively. Further studies will evaluate the validity of the smoking questionnaire and the use of point-of-care testing to differentiate cannabis use, active cigarette smoking, and NRT use. Results will provide preliminary data to directly test NRT use, separate from tobacco use, and surgical outcomes.