maker to plan for gender-specific cessation service and our experience provides considerable evidences.

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POS4-30

CIGARETTE SMOKING AND OUTCOMES AFTER ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANT

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BACKGROUND: There are limited data on the effect of cigarette smoking on treatment outcomes in the allogeneic hematopoietic stem cell transplant (HSCT) population. Abnormal lung function is a known risk factor for respiratory failure and other morbidity and mortality, although the specific causes of these abnormalities have not been well explored.

METHODS: We conducted a retrospective observational cohort study of 845 consecutive patients aged > 18 years who underwent allogeneic HSCT at the Seattle Cancer Care Alliance/Fred Hutchinson Cancer Research Center. Smoking exposure was defined by quit time, smoking status (never, former, and current) and log2-transformed pack-years. The main outcomes were time to respiratory failure within 100 days of transplant, relapse, and non-relapse mortality.

RESULTS: In multivariate analyses, a two-fold increase in pack-years smoked was associated with an increased risk of early respiratory failure (HR 1.33, 95% CI 1.09 to 1.64, p = 0.006). This association was observed independent of pre-transplant lung function. While a two-fold increase in pack-years smoked was also associated with an increased risk of relapse within 100 days of transplant (HR 1.27, 95% CI 1.01 to 1.59, p = 0.04), this finding did not hold with overall relapse (HR 1.16, 95% CI 0.92 to 1.46, p = 0.21). An association was not observed between cigarette smoking and non-relapse mortality.

CONCLUSIONS: Cigarette smoking is associated with an increased risk of respiratory failure and disease relapse within 100 days of allogeneic HSCT. The association with respiratory failure is mediated in part by abnormal lung function prior to transplant and likely through other mechanisms as well. Given the adverse effects associated with cigarette smoking prior to transplant, future studies should focus on obtaining accurate smoking histories, tracking prospective changes in smoking status, and assessing the impact of tobacco cessation on outcomes in this population.

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POS4-31

THE EFFECT OF RIO DE JANEIRO´S SMOKE-FREE LEGISLATION ON CARBON MONOXIDE CONCENTRATION IN HOSPITALITY VENUES

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Background: Several recent studies have clearly shown that no level of exposure to secondhand smoke (SHS) is safe, and a close link exists between SHS and the risk of coronary heart disease and stroke. Carbon monoxide (CO) is one of the most important components present in SHS.

Objective: To evaluate the impact of the smoking ban law in Rio de Janeiro city, Brazil, on the CO concentration in restaurants, bars, nightclubs, and similar venues.

Methods: In the present study we measured the CO concentration in 146 hospitality venues by using portable CO monitors to measure CO concentration in different environments (indoor, outdoors areas). These measurements were performed twice, before and 12 weeks after the law was implemented. We verified the quality of the air in the city during the same period of our study through the air quality databank from the Environmental Agency of Rio de Janeiro (INEA).

Results: The CO concentration pre- and post-ban in hospitality venues was indoor area 2.60 (1.77) vs. 1.12 (1.01) ppm (p<0.0001); outdoor area 2.61(1.27) vs. 1.14(1.09) ppm (p<0.0001). The average CO concentration measured by INEA in 2 automatic stations in the city was lower than 1 ppm during both the pre- and post-ban periods.

Conclusion: Rio de Janeiro´s smoke-free legislation significantly reduced the CO concentration in hospitality venues. The quality of the air in the city during the study did not influence the results.

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POS4-32

MACHINE SMOKING REGIMES AS INDICATORS OF HUMAN EXPOSURE TO SMOKE TOXICANTS

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Historically cigarette emissions have been measured using smoking machines operating under ISO/FTC parameters, a regime which underestimates puff volumes and frequencies for most smokers. Other regimes have been developed to represent more "intensive" smoking patterns, or mimic differences in human smoking across different cigarettes. Recent studies examining smokers' exposure to nicotine have provided mixed conclusions as to whether any smoking regime can predict human exposure. There is also limited data available examining the effectiveness of machine smoke yields as predictors of exposure to smoke toxicants. We have therefore undertaken a study to compare a range of toxicant yields, obtained under different machine smoking regimes, with biomarkers of exposure (BoE) in smokers. The study was undertaken in Germany, involving occasional clinical confinement of two groups of 6mg ISO tar cigarette smokers, three groups of 1mg ISO tar cigarette smokers, and one non-smoker group; each group contained fifty subjects. BoE for nicotine, CO, four TSNAs, acrolein, crotonaldehyde, three PAHs, 1,3- butadiene, and three aromatic amines were measured for each of the subjects. Cigarettes were machine smoked to determine the yields of nicotine and smoke toxicants under ISO, HCI, ISO/TC126 WG9 Option B (WG9B) regimes, and the HCI regime without ventilation blocking; ratios of toxicants to nicotine were also calculated. Stronger correlations were obtained between BoE levels and machine yields than between BoE levels and ratios of yields to nicotine. For the involatile aromatic amines, pyrene and TSNAs very good correlations were obtained with both HCI and WG9B yields, although WG9B yields gave stronger correlations with the TSNA BoE. With the volatile smoke constituents the WG9 smoke data gave very strong correlations with the BoE. These data show that the exposure of 1 and 6 mg product smokers to toxicants were well predicted by machine smoking data obtained under the WG 9B regime. Smoke data obtained under other regimes was less able to predict exposure to a range of volatile and involatile toxicants.

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POS4-34

CORRELATES OF CIGARETTE ACCESS BEHAVIOURS AMONG CANADIAN YOUTH SMOKERS: FINDINGS FROM THE 2006-2007 CANADIAN YOUTH SMOKING SURVEY

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Background: Point-of-sale restrictions aim to prevent youth from acquiring cigarettes; however, often these restrictions do not work as youth still access cigarettes from both tobacco retailers and social sources, such as family members, friends or strangers.

Purpose: The purpose of this study was to explore the between-school variability in cigarette access behaviour and the characteristics associated with whether youth smokers access cigarettes from social sources or if they purchase directly from retailers.

Methods: Nationally representative data collected from 41,886 Grade 9 to 12 students attending 143 secondary schools who participated in the 2006-07 Canadian Youth Smoking Survey (YSS) were examined for descriptive analyses. Multi-level logistic regression models were used to determine between-school variation in youth cigarette access and to examine student-level characteristics associated with the odds of a student reporting that they usually buy their own cigarettes versus usually getting their cigarettes from a social source.

Results: Daily smokers are more likely to buy their own cigarettes from a store compared to occasional smokers (chi square=390.5, degrees of freedom=2, p<.0001).