POS1-84

BRIEF SMOKING CESSATION ADVICE AND ACTIVE REFERRAL TO SMOKING CESSATION SERVICES: A CLUSTER RANDOMIZED CONTROLLED TRIAL

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BACKGROUND AND OBJECTIVES: Although most smokers are aware of smoking cessation (SC) services, many have never used SC services. We aimed to develop simple, practical and substainable interventions to increase SC service use in the 2015 COSH "Quit to Win" Contest. METHODS: A single-blinded, parallel three-armed cluster randomized controlled trial randomly allocated biochemically validated daily smokers proactively recruited in the community into SC services referral (Group A) (n=402), brief advice (Group B) (n=416) and control group (Group C) (n=408). Smokers in both intervention groups (A & B) received brief SC advice (AWARD model) and a health warning leaflet. Smokers in Group A further recevied a pocket size SC referral card and were actively referred to SC service providers for a quick appointment. The control group received very brief general SC advice and a 12-page self-help booklet. Follow-up telephone SC advice was provided for the intervention groups at 1 and 2 months. Primary outcome was self-reported 7-day point prevalence quit rate at 6 months. Secondary outcomes were biochemically validated quit and smoking reduction rates (daily cigarette consumption reduced by ≥50%; excluding quitters). FINDINGS: Overall retention rate at 6 months was 72.3%. By intention to treat, the quit rate was 17.2% in Group A, 9.4% in Group B and 11.5% in Group C (A vs. B, p<0.001; A vs. C, p=0.02; B vs. C, p=0.31). Corresponding biochemically validated quit rates were 9.0%, 5.0% and 5.1% (A vs. B, p=0.03, A vs. C, p=0.03; B vs. C, p= 0.95). Smoking reduction rates were similar in the 3 groups (A: 22.9%, B: 23.3% and C: 24.5%, p=0.85). Logistic regression analysis found that smoking fewer cigarettes (odds ratio [OR] 0.95, 95% CI: 0.92-0.97), started smoking in later age (OR 1.03, 95% CI 1.00-1.07) and having more confidence for quitting (per unit OR increase 1.12, 95% CI 1.02-1.24) were associated with quit at 6-month. CONCLUSION: This study showed that proactive intervention with brief advice and active referral to SC service for smokers recruited in the community setting was effective in increasing quitting.

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POS1-85

CIGARETTE CUES CAPTURE ATTENTIONAL RESOURCES OF SMOKERS AND NEVER-SMOKERS, BUT FOR DIFFERENT REASONS

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In the laboratory, smokers reliably show higher reactivity to cigarette versus neutral cues. However, never-smokers also show enhanced brain responses to cigarette cues, albeit less than smokers. It has been hypothesized that for never-smokers, reactivity to cigarette cues might be attributed to an overall more negative attitude toward smoking, rather than to their motivational relevance. The late positive potential (LPP) is a component of the event-related potential (ERP) that reliably measures emotional arousal. The LPP is larger for motivationally salient cues relative to neutral ones, even when the same stimuli are repeated multiple times. We recorded ERPs during a repetitive picture-viewing paradigm to assess the effects of stimulus repetition on the amplitude of the LPP in a sample of 34 smokers (SMO) and 34 never-smokers (NEV). We predicted higher LPP amplitude to cigarette cues in SMO, and habituation of the LPP response to cigarette cues in NEV, as a function of stimulus repetition. This pattern of amplitude modulation would suggest that cigarette cues are motivationally relevant stimuli only for SMO. When viewed for the first time, we observed greater LPP amplitude to pleasant, unpleasant, and cigarette cues relative to neutral (all p<0.0001) for all subjects. Following stimulus repetition, we observed greater LPP amplitude to pleasant and unpleasant cues relative to neutral, in both SMO (all p<0.001) and NEV (all p<0.008). Supporting our hypothesis, we observed greater LPP amplitude to cigarette cues relative to neutral in SMO (p=0.025), but not in NEV (p=0.1). While there were no group differences in self-reported ratings of pleasure and arousal for emotional or neutral stimuli (all p<0.0001), NEV rated smoking cues as unpleasant (p<0.0001). These findings suggest that cigarette cues capture attentional resources of SMO and NEV, but for different reasons. For NEV, cigarette cues are perceived as unpleasant, and elicit an initial enhanced LPP to cigarette cues that habituates with stimulus repetition. For SMO, cigarette cues have acquired significance through repeated pairing with nicotine and evoke an emotional response, even when repeated.

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POS1-86

THE RELATIONSHIP BETWEEN SMOKING STATUS, NICOTINE DEPENDENCE AND OUTCOMES OF PATIENTS ENROLLED IN THE NATIONAL LUNG SCREENING TRIAL

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Smoking causes nearly 90% of all lung cancer deaths. In addition to primary prevention (tobacco control), secondary prevention through early detection is another strategy to reduce lung cancer death rates. Lung cancer screening (LCS) with low-dose CT scans identifies lung cancer at an earlier, more treatable stage in patients with extensive smoking histories. We undertook this study to better understand the behavior of smokers within a screening cohort, to correlate those variables with downstream outcomes, and to identify predictors of continued smoking such that effective tobacco treatment efforts can be incorporated into lung cancer screening programs. This is a secondary analysis of the American College of Radiology Imaging Network (ACRIN) dataset from the National Lung Screening Trial (NLST). The objective was to evaluate the effect of nicotine dependence (as measured by FTND and HSI) and smoking status on rates of smoking cessation, lung cancer, and mortality in high-risk individuals who participated in lung screening through NLST. Of the 14,125 participants screened for lung cancer, 7,057 were current smokers at baseline (the remainder consisted of former smokers). Lung cancer screening patients who had higher FTND scores had higher rates of cancer (2.2% very low dependence smokers vs. 4.1% very high dependence, $p < 0.01$), higher rates of mortality (5.4% very low dependence smokers vs. 8.9% very high dependence, $p < 0.01$), and higher rates of lung cancer-specific mortality (0.7% very low dependence smokers vs. 2.5% very high dependence, $p < 0.01$). Similar patterns emerged for the HSI. Further, those who were smoking at the time of LCS and had high dependence scores were less likely to quit smoking after LCS (very high dependence vs very low dependence; Odds Ratio = 0.53, 95%Confidence Interval = 0.44-0.65). These data show that level of nicotine dependence contributes to clinical cancer and mortality outcomes. Quitting smoking may minimize the incidence of lung cancer and mortality in this high-risk group of patients. Strategies to assist with tobacco treatment in the context of LCS are of vital importance, especially for high dependence smokers who may be less likely to quit after LCS.

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POS1-87

TUNABLE AUTOMATED PASSIVE DIFFUSION TRANSDERMAL INDIVIDUALIZED NICOTINE DELIVERY TECHNOLOGY FOR SMOKING CESSATION

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INTRODUCTION: Chrono Therapeutics, Inc. has developed a wearable automated passive diffusion transdermal nicotine delivery technology for smoking cessation that generates a 3-peak nicotine blood plasma profile over the course of a day; it also includes adherence tracking and real-time behavioral coaching through a connected smartphone application. METHODS: Two Phase I, nicotine PK studies in healthy Caucasian male volunteers who are smokers (n=12, [BMI] 20 to 30 kg/m^2, 18 to 50 years of age; >11 cigarettes per day). Nicotine was delivered using an engineering prototype at various times throughout the day and blood samples col-