

Smoking Cessation, continued

NONINVASIVE PULSE CO-OXIMETRY AS A TOOL TO DETECT SMOKING STATUS IN AN OUTPATIENT SETTING

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PURPOSE: There are several methods available to detect smoking status. We evaluated the use of a noninvasive pulse co-oximeter that measures carboxyhemoglobin and methemoglobin as a tool to detect smoking status in a outpatient setting.

METHODS: We measured at each outpatient visit carboxyhemoglobin and methemoglobin using a Rad 57 pulse co-oximeter. We asked patients questions regarding their smoking status. The data was analyzed by using standard t-test and we calculated sensitivity, specificity, positive predictive value, and negative predictive value along with pre and post test probabilities.

RESULTS: Of the 476 patient visits 98 were smokers, 72 second hand smokers, and 306 non smokers. At a cutoff for carboxyhemoglobin at 6% and higher the sensitivity was 46% with a specificity of 95% to detect a smoker. The positive predictive value was 76% with a negative predictive value of 85%. For methemoglobin at a cutoff of .7% and higher the sensitivity was 45% with a specificity of 92%. The positive predictive value was 65% with a negative predictive value of 84% for a smoker. The carboxyhemoglobin levels for smokers was 5.9+/-4.45% while the carboxyhemoglobin levels for non smokers was 1.95+/-1.55%. This difference was significant (P=3.6092SE-14). The methemoglobin levels for smokers was .66+/- .31% while the methemoglobin levels for non smokers was .38+/- .19%. This difference was significant (P=3.34689E-14). The carboxyhemoglobin levels for second hand smokers was 2.79+/-2.89% while the carboxyhemoglobin levels for non smokers was 1.94+/-1.55%. This difference was significant (P=0.001913). The methemoglobin levels for second hand smokers was 0.49+/-0.25% while the methemoglobin levels for non smokers was 0.38+/-0.19%. This difference was significant (P=0.000653).

CONCLUSION: In an outpatient clinic setting pulse co-oximetry can be used as a cheap quick and noninvasive method to detect smoking status.

CLINICAL IMPLICATIONS: Detecting smoking status is key to effectively counselling patients regarding smoking cessation. Pulse co-oximetry can be effectively used in this situation. In addition its use may be extrapolated to other public health settings such as adolescent smoking cessation programs within school systems to help prevent smoking in vulnerable populations.

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ILL EFFECTS OF SMOKING: HOW MUCH DO THE SCHOOL CHILDREN KNOW?

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PURPOSE: Over 90% of smokers begin smoking before the age of 18. Antismoking programs in schools play a major role in preventing smoking habits in students. Studies have shown that anti-smoking instructions as part of the curriculum is effective in preventing initiation of smoking among children. In 1988 National School Boards Association issued a report outlining the implementation steps and guidelines concerning nonsmoking policies and antismoking school programs. We conducted this survey to obtain baseline knowledge in early grade school children about the ill effects of smoking prior to implementation of antismoking educational program.

METHODS: A 10 point questionnaire (Yes/No answers) was administered to the children of 1st, 2nd and 3rd grades in Corpus Christie, Texas. A total of 4161 children completed the survey.

RESULTS: The overall baseline knowledge of all grades about the ill effects of smoking, its addictive nature, the effects of passive smoking and smoking prevention programs was good. The correct responses for all grades ranged from 81% to 97%. There was a statistically significant higher knowledge level among the 3rd graders compared to 1st and 2nd graders.

CONCLUSION: The overall knowledge level was good but there is room for improvement in the first and second grades. Antismoking classes must be initiated early, preferably in the first grade. Obtaining baseline knowledge is important to assess the effectiveness of antismoking programs. Following this survey antismoking message was delivered to these children through a cartoon movie and comic book involving lovable ants

depicting the ill effects of smoking. A repeat survey following this educational program is underway.

CLINICAL IMPLICATIONS: Smoking among students is a major public health problem. Antismoking education programs must be part of a comprehensive school health curriculum and they should emphasize on social and health consequences of smoking and reflect the needs of the community. Training students in refusal skills, involving parents, teachers and peers in smoking-prevention activities will discourage children from ever starting to smoke and reinforce the knowledge about the health hazards of smoking.

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EFFICACY AND SAFETY OF 12 WEEKS OF VARENICLINE OR PLACEBO FOR SMOKING CESSATION: POOLED RESULTS FROM THREE CLINICAL TRIALS

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PURPOSE: Varenicline, an $\alpha 4\beta 2$ nicotinic acetylcholine receptor partial agonist, has demonstrated significant efficacy for smoking cessation versus placebo and bupropion SR. The objective of this analysis was to evaluate continuous abstinence from smoking and the incidence of adverse events (AEs) over time using pooled data from multiple trials of varenicline versus placebo.

METHODS: Data were pooled from 3 randomized, double-blind trials to examine the efficacy and safety of 12 weeks of varenicline 1.0 mg twice daily (BID) (n=945) versus placebo (n=805) with a 40-week non-treatment follow-up period. The primary endpoint was the carbon monoxide-confirmed (≤ 10 ppm exhaled) continuous abstinence rate (CAR) for Weeks 9-12. Secondary endpoints included CAR for Weeks 9-52 and safety measures.

RESULTS: Demographic characteristics were similar between groups. The CAR for varenicline was significantly higher than for placebo at Weeks 9-12 (varenicline: 45.9% vs placebo: 16.9%; odds ratio [OR]=4.13; 95% confidence interval [CI]=3.29-5.18; P<0.0001). Similarly, the Week 9-52 CAR for varenicline was significantly greater than for placebo (varenicline: 22.6% vs placebo: 8.6%; OR=3.17; 95% CI=2.36-4.24; P<0.0001). The most frequent AEs observed in varenicline-treated participants were nausea (varenicline: 31.3%; placebo: 9.9%), insomnia (varenicline: 16.5%; placebo: 12.1%), headache (varenicline: 16.1%; placebo: 13.0%), and abnormal dreams (varenicline: 13.4%; placebo: 4.4%). Most varenicline-treated participants who had AEs experienced their onset in the first two weeks of treatment (nausea: 23.9%; insomnia: 11.0%; headache: 7.8%; abnormal dreams: 9.4%). Onset of new AEs after 3 to 4 weeks of treatment was infrequent. The overall prevalence of AEs decreased over the 12 weeks of treatment. Most AEs were mild or moderate in intensity and discontinuations of study treatment due to AEs were low.

CONCLUSION: Varenicline significantly increases continuous abstinence from smoking at the end of treatment through to Week 52 compared with placebo. Varenicline is well-tolerated and its safety profile is acceptable. The onset and presence of nausea, headache, insomnia, and abnormal dreams peaks in the first week of varenicline treatment and then reduces steadily thereafter.

CLINICAL IMPLICATIONS: Varenicline is safe and effective for smoking cessation.

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