



Center for Behavioral Health Studies

Hard-to-Treat Smokers May Benefit From Medication That Acts on Dopamine

Nearly 23 percent of Americans 18 years of age and older smoke cigarettes. Although this represents a substantial decrease since smoking rates were at their highest in 1965, most current smokers say they would like to quit.

According to the National Centers for Disease Control and Prevention, 71 percent of smokers interviewed in 2000 said they wanted to quit smoking. Of that total, 41 percent said they tried to quit in the preceding year.

Overview

Many people who are still continuing to smoke are the hardest to treat, since they have failed to stop despite numerous attempts. According to Mona L. Sumner, Chief Operations Officer of Rimrock Foundation, **“the reason for this is peoples’ efforts to quit are largely frustrated by nicotine’s addictive effects”**. These effects are a result of the drug’s ability to trigger and sustain release of the pleasure producing neurotransmitter dopamine in the brain.

Selegiline is a medication currently used by physicians primarily to delay the progression of symptoms in Parkinson’s disease. Of significance, it has also been found to help smokers who want to quit but have been unsuccessful with other treatments.

Study Design

Many smokers who attempt to quit, fail because of the powerful withdrawal symptoms experienced when they stop smoking. **There is very strong evidence that the symptoms of nicotine withdrawal are associated with sharp declines in dopamine levels in the brain.**

For this reason, medications that can act to boost dopamine levels can be of benefit in helping people with a craving for nicotine.

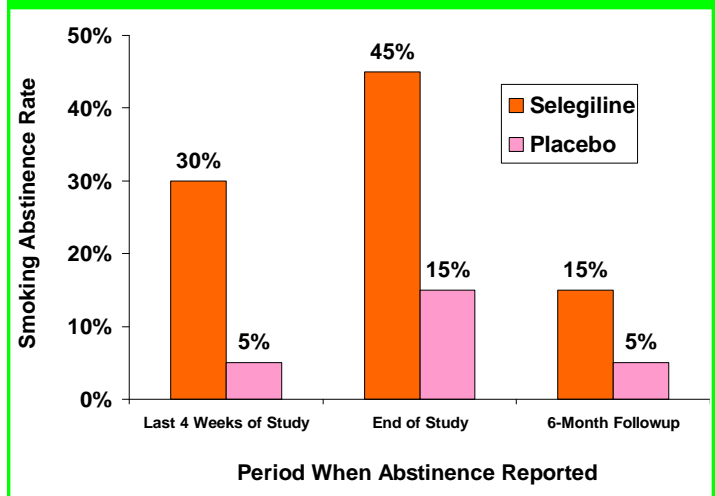
In Parkinson’s disease, it has been found there is a massive loss of dopamine producing cells. Treatment with Selegiline helps the brain retain its stores of dopamine longer by inhibiting the activity of monoamine oxidase-B, an enzyme that breaks down dopamine.

To evaluate the effect of Selegiline in smoking cessation treatment, the researchers recruited 40 smokers (average age 49). These people had unsuccessfully tried to stop smoking and described themselves as highly motivated to quit.

Study Outcome

Over an 8 week study period, all participants received weekly smoking cessation counseling that included motivational counseling for the first 3 weeks of the study. Work on relapse prevention strategies was scheduled in the last 5 weeks. Of the forty participants, 8 men and 12 women received Selegiline while 7 men and 13 women received placebo.

Selegiline Helps Smokers Quit, Remain Abstinent Longer



Summary

By the end of the eighth week, 45 percent of the participants who received selegiline reported they had not smoked during the preceding week. This compared with only 15 percent of those receiving placebo. (Please see Exhibit I).

Selegiline appeared to substantially improve outcomes for smokers who have previously had a difficult time stopping smoking.

The results are much better than those typically achieved by smokers using nicotine replacement therapy to help them quit.

This study offers strong confirmation that controlling the dopamine system could be an important approach to successful treatment of nicotine addiction.

Editorial Staff

Editor in Chief:
David W. Cunningham

Assistant Editors:
Hugh Kilbourne
Kay Seder

Art/Graphics Designer:
Lenny Joyce



Center for Behavioral
Health Studies

Rimrock Foundation
P.O. Box 30374
Billings, MT 59107

NON-PROFIT
U.S. POSTAGE
PAID
BILLINGS, MT
PERMIT #142

For further information on Rimrock Foundation's treatment programs, call Jen Porter, Admissions Supervisor, at 1-800-227-3953 or 1-406-248-3175, or visit our website at www.rimrock.org. For more educational information on smoking, contact the Rimrock Foundation Library at the above numbers.