

Letter to the Editor

Nicotine replacement therapy - A benediction for smokers

Adhikary M

To the editor

Smoking is a pandemic problem at this moment. Worldwide, 1.3 billion people smoke, and unless urgent action is taken, 650 million of them will die prematurely due to tobacco consumption, half of them in productive middle age, each losing 20 to 25 years of life.¹ In China where tobacco use is increasing, the direct and indirect health costs of smoking are estimated at \$ 6.5 billion per year. Over 15 billion cigarettes are smoked everyday globally. The total number of smokers is expected to reach about 1.6 billion by 2025, up from the current 1.3 billion. Approximately 22% of women in industrialized countries are smoker, while about 9% of women in developing countries smoke. According to the World Health Organization report, 54.5% of smokers are Asian, 20% are European, 13% American and 11.8% African. The top 5 cigarette consuming countries are China [2.172 billion], India [481b], USA [463b], Russia [309b], Japan [169b], and Indonesia [138b]. In China, 53.4% of males aged 15-69 smoke, while only 4% of women smoke there. In Sweden, 17.4% of men and 20.4% of women use tobacco.²⁻³ In Bangladesh, over 10.5 million people who are currently malnourished could have an adequate diet if money spent on tobacco were spent on food instead, saving the lives of 350 children under age 5 each day

Nicotine is the basis of tobacco addiction. Tobacco contains nicotine, a powerful and highly addictive substance. Most tobacco products deliver nicotine to the brain very effectively, bringing on the rapid onset and maintenance of addiction. This addiction leads to the unfortunate situation where an otherwise rational, motivated, knowledgeable person who understands risks of tobacco, continues to use it. Evidence of the dependence-producing properties of tobacco has been accumulating for years. In 2000, the Royal College of Physicians, Great Britain, summarized this body of research by concluding that nicotine is an addictive drug on par with heroin and cocaine and that the primary purpose of smoking tobacco is to deliver a dose of nicotine rapidly to the brain. Studies from numerous countries show that although an overwhelming majority of tobacco users want to quit, less than half make a quit attempt each year, and very few of those succeeds in quitting long-term. While up to 40% of those using tobacco will make a serious quit attempt in any given year, as few as 3% actually achieves long-term abstinence.

Surveys in United States have found up to 70% of tobacco users report a strong interest in quitting. A 2002 report indicated that 45.6% of Australian smokers intended to quit smoking in the following six months. A 2003 study on behalf of Ireland's office of tobacco control indicated that 76% of Irish smokers intended to quit. Sixty seven percent of those wishing to quit had previously attempted to quit.

Nicotine replacement therapy [NRT], including nicotine gum, inhaler, nasal spray, lozenge and patch, as well as anti-depressants, can be used to assist tobacco users to quit. NRT delivers low dose of nicotine without delivering the many other harmful substances found in tobacco smoke and can significantly increase the success rate of other cessation efforts.

Among NRT 'Bupropion' is the first new pharmacological treatment for smokers introduced since Nicotine replacement therapy 20 years ago. Bupropion was licensed in June 2000 by the medicine control agency for use in the United Kingdom to help patients stop smoking.⁴⁻⁶

There are about 1.0 billion regular smokers in the world. One in every two lifelong smokers will die prematurely from tobacco related causes. Interventions to help people stop smoking are cost effective in preventing that premature loss of life, and nicotine replacement products are the most effective treatment available. About 20% of those given nicotine replacement with support from specialist counselors will remain non-smokers for one year and up to about 10% will remain non-smokers if given brief advice from a health professional in addition to nicotine replacement. This later approach may potentially have a far greater impact on public health because wider coverage of the population can be achieved. It is also cost effective. For this, nicotine replacement and counseling services have to be made generally available through the current health service system of the country and nicotine replacement products should be enlisted in the list of essential drugs. Bupropion should be made available free of cost at existing primary, secondary and tertiary level of health service system of Bangladesh.

New services to help people stop smoking, which are being established in England as a result of the recent government white paper on smoking, aim to provide smokers with counseling support. One week of free nicotine replacement is available to the tobacco dependent patients at National Health Service [NHS] centers. And the potential impact of this service at a population level is large.

Bupropion was originally developed as an antidepressant, but it is chemically unrelated to other antidepressant drugs. Its mechanism of action in smoking cessation is not understood

*Dr Minati Adhikary, Associate Professor of Community Medicine, Dhaka medical college, Dhaka, e-mail: minatibd@yahoo.com

*For correspondence

but may be mediated by raising the concentration of dopamine in the nucleus accumbens, a process that is also involved in nicotine addiction. Two preliminary reports, and now two clinical trials funded by manufacturers in England, have shown its efficacy in smokers who were also given regular counseling support. The first of these studies compared placebo with three different doses of sustained released bupropion given for seven weeks in a parallel group study of 615 smokers: rates of quitting smoking after one year were 12.4 with those who took a placebo, 19.6 for those who took 100 mg bupropion daily, 22.9% for those who took 150 mg, and 23.1% for those who took 300 mg.⁷⁻⁹ This effect occurred independently of any evidence of current or previous depression. The second study of 893 smokers compared treatment with 150 mg sustained released bupropion twice daily [once daily for the first three days] either alone or in conjunction with transdermal nicotine, with nicotine alone or placebo. Cessation of smoking was sustained for one year of follow up in 5.6% of participants treated with placebo.⁹ 8% of those treated with transdermal nicotine, 18.4% of participants treated with bupropion alone, and 22.5% of participants treated with bupropion and nicotine.^{6,10} Bupropion alone was more effective than placebo or transdermal nicotine and not significantly less effective than bupropion plus transdermal nicotine. Bupropion significantly reduced weight gain during the treatment period, although these result was subsequently lost. The main adverse effect of bupropion was insomnia and dry mouth. To the smoker, however bupropion will be provided in four weeks treatment packs. It is the time to help nicotine addicted patients through NRT.

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