MEDICAL CHANNEL

EDITORIAL

A COMBINED THERAPY MAY BE EFFICACIOUS IN AMELIORATING NICOTINE WITHDRAWAL SYMPTOMS

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Withdrawal from the chronic nicotine administration is associated with many aversive symptoms including bradycardia, insomnia, increased appetite, depressed mood and impaired cognitive functions [1] [2]. These aversive symptoms are the hindrance in quitting nicotine use. Research has shown that acute nicotine administration result in enhanced cognitive function that may reinforce nicotine administration. Chronic administration has no effect but withdrawal from chronic administration will results in impaired hippocampus dependent learning and memory [3].

á4â2* nAChRs present in the hippocampus are the main receptors through which nicotine produce its effect on learning and memory [4] [5] [6]. By targeting these á4â2* nAChRs impaired cognitive functions can be treated that are associated with withdrawal. Recently varenicline has been approved by the FDA and can be used as a therapy for diminishing the withdrawal symptoms so that helpful in quitting smoking. Varenicline is a partial agonist of the á4â2 subtype of the nicotinic acetylcholine receptor and a full agonist of á7-receptors [7]. Increased appetite is also one of the withdrawal symptoms. Since varenicline also act a full agonist at á7-receptors and these receptors are involved in regulating diet by decreasing the food intake.

Varenicline is a partial agonist; it partially stimulates á4â2 receptor and does not produce full effect like nicotine. It competitively binds with these receptors and blocks nicotine ability to bind and stimulate mesolimbic dopamine system and ultimately results in the decrease release of dopamine [8].

Since, depression due to chronic nicotine administration is also one of the withdrawal symptoms that contribute in sustained use of nicotine. So, we do hereby suggest hat varenicline along with antidepressant (SSRIs) might serve as a better therapy to eliminate withdrawal symptoms. Pre-clinical and clinical studies are required in this context to determine the therapeutic potential of this combined treatment.

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