



Smoking Addiction and Challenges in Treatment in Psychoses

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Abstract

Schizophrenia is a major mental illness which affects young adults. It comes with a huge burden of illness and medication compliance is an essential part of recovery. However, despite compliance, there are instances of break through symptoms and some of this has been tied to smoking. Smoking is rampant all over the world and among patients with Schizophrenia, it is inordinately high. In this article, we looked into possible reasons behind increased smoking among patients with Schizophrenia, the biochemical basis behind it and the way it influences treatment.

Keywords

Smoking, Schizophrenia

Schizophrenia is a major mental illness which affects young adults. It comes with a huge burden of illness [1] and medication compliance is an essential part of recovery. However, despite compliance, there are instances of break through symptoms and some of this has been tied to smoking [2]. Smoking is rampant in all parts of the world and in several countries; the prevalence of smoking among schizophrenia patients is extraordinarily high. Different researchers have found differing prevalence, 70% by José de Leon [3], 88% by Hughes et al. [4] but all agree that smoking in patients with Schizophrenia is significantly higher than the general population. Another study found that smoking in patients with Schizophrenia is nearly three times the rate in the general population and higher than the elevated rates of smoking among patients with other psychiatric illnesses [5]. Why is this so? There are several postulates.

1) Is it the illness itself? Possibly, patients with schizophrenia self-medicate with nicotine to alleviate both positive and negative symptoms as well as to improve cognition [6]. These putative beneficial effects of nicotine may be mediated through the regulation of a dysfunctional mesolimbic dopamine system [7]. It has been reported that there is a worsening of psychotic symptoms on stopping smoking and subsequent nicotine withdrawal [8].

2) Smoking may be an etiological risk factor in schizophrenia. It may be that, repeated activation by nicotine of the mesolimbic system over a lengthy period of time precipitates the onset of schizophrenia in vulnerable individuals.

3) Genetic or environmental factors might predispose individuals, both to develop schizophrenia and to start smoking [9,10].

4) Another possible cause could be that patients receive antipsychotic drugs, which produce marked dopamine receptor

blockade. Possibly a very high level of smoking is necessary to overcome this blockade and produce the reward effects. It has been shown that, compared with baseline, patients with chronic schizophrenia smoke more after starting haloperidol [11].

According to a study in Scotland [5], heavy cigarette smoking and severe nicotine addiction are intimately associated with the schizophrenic illness. More patients with schizophrenia start to smoke, and few give up smoking. The patients' high level of addiction almost certainly contributes to their reduced life expectancy [12]. Schizophrenic patients who smoke are an even more disadvantaged group as their life expectancy is shortened not only due to the associated cardio metabolic syndrome associated with antipsychotics but also due to smoking. In terms of treatment this is important as the drug levels of antipsychotic greatly vary with amount of nicotine in the body. Cigarette smoking is one of the environmental factors that contribute to individual variations in response to administered drug. Polycyclic aromatic hydrocarbons (PAC) present in cigarette smoke induce hepatic enzymes which in turn lead to increased metabolism, increased clearance and decreased plasma levels of antipsychotics like clozapine, chlorpromazine, olanzapine etc [2]. Thus, in a setting where smoking is prohibited, the same medication dose will be efficacious, but when the patient is discharged and starts smoking, there are break through psychotic symptoms. This has treatment implications and medications need to be adjusted accordingly in patients who do not or are unable to stop smoking. Also, Bupropion, commonly used for smoking cessation should be used with caution in patients with Schizophrenia as it has the potential to induce [13,14] or increase psychotic symptoms through its action as a dopamine uptake inhibitor [15,16].

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