

4.2

Pharmacological Treatment Dimensions Smoking & Psychiatric Medication

Introduction

Stop smoking support in mental healthcare settings should always be delivered collaboratively, drawing upon a range of resources and fitting in with the rest a service user's care plan. As mention in Section 3.1, not attending to this rule will, at best, lead to opportunities being lost for the reinforcement of smoking cessation support by others working with the patient. At worst, it may result in smoking cessation support interfering with other treatment in a way that is detrimental. These other treatments include the medications a service user is taking for their mental illness, which as discussed in this section, can be significantly effected by smoking cessation.

Smoking Cessation & Medication Metabolism

Many drugs used to manage mental health conditions can be affected by smoking. Hydrocarbon by-products of smoking induce liver enzyme production of cytochrome P450 enzymes 1A2 (CYP1A2) (Bazire, 2005). These enzymes are involved in the metabolism of some forms of psychotropic medication and consequently smokers often require higher doses.

Unsurprisingly, if a service user stops smoking then a fall in CYP1A2 enzymes occurs within days of quitting. This, in turn, leads to an increase in serum levels of some medications if the same dosage is maintained. This rise in serum levels can have adverse, or even dangerous, effects.

A number of different medications may be affected (see list), although one drug, clozapine, can be of particular concern.

Clozapine is an atypical anti-psychotic marketed by the trade name of 'Clozaril'. It is prescribed for, among other things, treatment resistant schizophrenia, often after other medications have been tried. Clozapine plasma concentrations can rise 1.5 times in the 2–4 weeks following smoking cessation (de Leon, 2004) and in some instances by 50–70% within 2–4 days. If baseline plasma concentrations are higher – particularly over 1 mg/litre – the plasma concentration may rise dramatically owing to non-linear kinetics. If patients smoking more than 7–12 cigarettes per day while taking clozapine decide to quit, the dose may need to be reduced by 50% (Haslemo *et al*, 2006; Ashir, 2008).

Some Medications affected by smoking (and quitting!)

Clozapine, Diazepam, Haloperidol

Mirtazapine, Olanzapine

Perphenazine, Propranolol

Tamoxifen, Theophylline,

Verapamil, Warfarin-R,

Zotepine, Amitriptyline,

Clomipramine,

Desipramine, Imipramine

(HDA, 2004)

Managing The Effects of Smoking Cessation & Medication Metabolism

Given the potential seriousness of abrupt changes in medication metabolism, baseline serum levels of effected medications should be obtained before quit attempts. This is particularly important in the case of clozapine. During smoking cessation, patients and staff should check for signs of toxicity such as drowsiness or myoclonic spasms. The dose of clozapine should be reduced and serum levels monitored more frequently. Conversely, if a patient starts smoking, the dose of medication may have to be increased (Cormac & McNally, 2008).

As the effects of smoking on medication metabolism described above are not a direct result of nicotine consumption, the strategy of attempting to counteract the increase in plasma clozapine (or other medications) is unlikely to be effective. The only valid course of action is an appropriate reduction in the prescribed dose of the medication.

Whether or not stop smoking support programmes have been established in mental healthcare settings there should be some form of protocol for the highlighting and managing cases in which smoking cessation is likely to induce important metabolic changes. This protocol should be designed locally and with reference to staff managing clozapine clinics, as well as senior nursing and medical staff.

Care must also be taken to disseminate this protocol beyond the mental healthcare setting itself. In particular, many professionals working in primary care and NHS Stop Smoking Services will come across service users taking an affected medication who wish to stop smoking. It is important that screening procedures in these settings include questions about medications that may be metabolized differently on quitting and that awareness is raised of the appropriate action to be taken.

Is the effect of smoking cessation on medication metabolism a problem?

One may argue that the potential of smoking cessation to dangerously raise medication levels is a reason to avoid delivering stop smoking support with service users taking affected medications. However, the metabolic changes really shouldn't be a problem if appropriate liaison is taking place between a patient's smoking cessation advisor and the clinician prescribing their medication.

Indeed, the effect of lowering the required dose of a particular medication may be seen in a positive light as many drugs used in mental health settings can raise the risk of physical morbidity. Clozapine, for example, increases the risk of Agranulocytosis (an acute condition involving a dangerous reduction in the number of white blood cells) as well as Metabolic Syndrome (associated with heart disease, stroke and diabetes). Therefore, a lower required dose could be seen as yet another benefit of quitting smoking for the patient.

References

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