NHS Grampian

Guidance For NHS Grampian Staff On Smoking Cessation And Psychotropic Drug Interactions

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Responsibilities for ensuring registration of this document on the NHS Grampian Information/ Document Silo:

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Organisational:	Mental Health and Learning Disability Services In-patient, Specialist Services and CAMHS and Aberdeen City, Aberdeenshire and Moray IJBs General Managers
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Responsibilities for review of this document:

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Revision History:

Revision Date	**Previous Revision Date**	**Summary of Changes (Descriptive summary of the changes made)**	**Changes Marked* (Identify page numbers and section heading)**
November 2021	November 2018	*'Mental Health'* removed from NHS Grampian logo.	Front page
November 2021	November 2018	Existing entries in Table 1 updated as detailed below: **Haloperidol** – changed to *'25 – 50%'.* **Tricyclic Antidepressants** – changed to '*25 – 50%'.* **Benzodiazepines** – *'up to 50%'* added.	Table 1 P2 P3 P4
November 2021	November 2018	**Lamotrigine entry** removed from Table 1 as no longer referred to in updated references.	P2 - Table 1
November 2021	November 2018	The following entries were added to Table 1: **Risperidone/Paliperidone** **Escitalopram.**	Table 1 P2 P3
November 2021	November 2018	References updated.	P5 - References

* Changes marked should detail the section(s) of the document that have been amended, i.e. page number and section heading.

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Background:

- Tobacco smoke contains polycyclic aromatic hydrocarbons that induce (increase activity of) certain hepatic enzymes (CYP1A2 in particular).
- For some drugs used in psychiatry smoking significantly reduces plasma levels and higher doses are required than in non-smokers.
- When a smoker who is stabilised on these medicines decides to stop smoking the blood levels of the active drug will increase over the course of a week or so, which may result in toxicity and adverse effects. Therefore, on cessation of smoking, consideration should be given to reducing the dose of such drugs to prevent adverse effects from occurring. Close monitoring of plasma levels (where useful), clinical progress and adverse effect severity are essential.

  Note: Nicotine Replacement Therapy (NRT) or use of e-cigarettes has no effect on this process, as it is the polycyclic aromatic hydrocarbons NOT nicotine that interacts with hepatic enzymes.

Recommendations for prescribing of psychotropic drugs during smoking cessation:

- Ascertain current smoking status and recent medication compliance.
- Determine effect of smoking on the patient's current psychotropic medication (refer to Table 1).
- Adjust dose if appropriate taking into consideration age, hepatic function and also time delay for onset of changes to plasma drug levels on smoking cessation. On stopping smoking there is a rapid decrease in activity of CYP1A2 enzyme with a new steady state being reached after approximately 1 week and a subsequent time delay for changes to the drug's steady state level (five half-lives).
- Review patient after 5 - 7 days and again after 14 days followed by ongoing monitoring as appropriate for the emergence of possible side effects due to raised serum levels of psychotropic medication (see Table 1).
- Monitor for change in smoking status being aware that dose may need to be adjusted accordingly if patient starts smoking again.

  Note: When a patient is on clozapine the prescriber must be informed, prior to the initiation of a smoking cessation programme, and a treatment plan agreed. Further specialist advice on the interpretation of clozapine plasma levels and appropriate dose reductions can be obtained from the Pharmacy Department, Royal Cornhill Hospital.

Table 1: SMOKING CESSATION AND PSYCHOTROPIC MEDICATIONS

The following table gives details of the psychotropic drugs most affected by smoking cessation and recommendations relating to patient management.

ANTIPSYCHOTICS	Expected interaction on stopping smoking	Management of smoking cessation
CHLORPROMAZINE	Probable increase in chlorpromazine plasma levels.	Monitor patient for increased adverse effects (e.g. sedation, dizziness, postural hypotension, extrapyramidal symptoms). If adverse effects occur reduce the dose as necessary.
CLOZAPINE	Significant increase in clozapine plasma levels by up to 50%. One study reported a mean increase in serum levels of 71% (Meyer, 2001).	Monitor serum levels before stopping (if no recent baseline level available). Reduce dose gradually by 25% over a week. Repeat plasma level one week after stopping. Ongoing monitoring required as plasma levels may continue to rise. Monitor for increased adverse effects, e.g. sedation, hypersalivation, constipation, changes in blood pressure, tachycardia. Case reports of seizures occurring 2-3 weeks after cessation.
HALOPERIDOL	Probable increase in haloperidol plasma levels. (Plasma levels approx. 25 – 50% lower in smokers).	Reduce dose by around 25%. Monitor patient for increased adverse effects (e.g. drowsiness, extrapyramidal symptoms). Consider further dose reduction.
OLANZAPINE	Increase in olanzapine plasma levels by up to 50%.	Reduce dose by 25%. Monitor patient for increased adverse effects (e.g. dizziness, sedation and hypotension).
RISPERIDONE/ PALIPERIDONE	Minor effect	Monitor closely
ZUCLOPENTHIXOL	Unclear, effect probably minimal.	Monitor.

ANTIDEPRESSANTS	Expected interaction on stopping smoking	Management of smoking cessation
DULOXETINE	Increase in duloxetine plasma levels by up to 50%.	Monitor patient for increased adverse effects (e.g. nausea, dry mouth, sedation, etc). If adverse effects occur reduce the dose as necessary.
ESCITALOPRAM	Increase in plasma levels by up to 50%	Monitor closely. Dose may need to be reduced.
FLUVOXAMINE	Increase in fluvoxamine levels by up to 33%.	Monitor for increase adverse effects (e.g. nausea, sedation, dry mouth, etc). If adverse effects occur reduce the dose as necessary.
MIRTAZAPINE	Possible increase in mirtazapine plasma levels but effect probably minimal.	Monitor for increased adverse effects (e.g. sedation).
TRAZODONE	Possible increase in trazodone plasma levels by around 25%.	Monitor for increased sedation. Consider reducing dose.
TRICYCLIC ANTIDEPRESSANTS including: amitriptyline, clomipramine, dosulepin, imipramine, nortriptyline.	Increase in tricyclics antidepressant plasma levels by 25-50%.	Monitor for increased adverse effects, e.g. sedation, nausea, cardiac, dry mouth, etc. Consider reducing dose by 10-25% over one week. Consider further dose reductions.
MOOD STABILISERS	**Expected interaction on stopping smoking**	**Management of smoking cessation**
CARBAMAZEPINE	Limited data. Interaction unlikely but possible that carbamazepine levels may increase.	Monitor patient for increased adverse effects and consider checking blood level if required.
LITHIUM	Theoretically levels may be lower. If patient also takes caffeine on smoking cessation, caffeine levels will rise which will cause lithium levels to fall.	Check levels after 1month cessation, especially if deterioration evident.

HYPNOTICS AND ANXIOLYTICS	Expected interaction on stopping smoking	Management of smoking cessation
BENZODIAZEPINES	Possible increase in plasma levels of up to 50% (depending on drug and smoking status). Patients may experience enhanced effects of benzodiazepines.	Monitor patient for increased adverse effects, e.g. sedation. Consider reducing dose by up to 25%.
OTHER	**Expected interaction on stopping smoking**	**Management of smoking cessation**
METHADONE	There has been a case report of respiratory insufficiency and altered mental status when a patient taking methadone for analgesia stopped smoking.	Monitor patient for signs of opioid toxicity and reduce the methadone dose accordingly.

Note: This guidance relates only to the effects of smoking cessation on psychotropic drugs. However it is essential to consider the potential effects on all medication prescribed.

The MHRA advised in October 2009 that the most important medicines to consider in those who smoke, or are trying to quit, include **OLANZAPINE, CLOZAPINE** and **CAFFEINE.**

Contact the Royal Cornhill Pharmacy Department for further information.

References:

- Specialist Pharmacy Service UK Medicines Information (UKMi) Medicines Q&As What are the clinically significant drug interactions with tobacco smoking? July 2020
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