

QTc Prolongation: Guidance for Mental Health Prescribers

1. Background:

- 1.1 Many psychotropic drugs have the potential to cause cardiac arrhythmias and ECG monitoring is often required. Patients with a prolonged QTc interval are at greater risk of arrhythmia.
- 1.2 The risk of adverse effects on the heart are greater for patients with:
 - abnormalities of their cardiovascular system on physical examination
 - a history of cardiovascular disease
 - other risk factors for cardiovascular disease
- 1.3 Patients taking high doses of drugs with an effect on QTc interval, or combinations of such drugs, are at greater risk. Drugs known to cause QTc prolongation are listed in appendix 1.

2. Guidance:

- 2.1 Carry out the following investigation before starting antipsychotic medication, 12 weeks after starting treatment and then at least annually:
 - weight and BMI
 - pulse and blood pressure
 - fasting blood glucose, glycosylated haemoglobin (HbA_{1c}), blood lipid profile and prolactin levels
- 2.2 If any of the following apply, offer the patient an ECG before starting antipsychotic medication and then at least annually:
 - the patient is prescribed other drugs that may prolong the QT interval
 - specified in the summary of product characteristics (SPC)
 - a physical examination has identified specific cardiovascular risk (such as diagnosis of high blood pressure)
 - there is a personal history of cardiovascular disease **or**
 - the patient is being admitted as an inpatient.

The specialist is responsible for the initial ECG but must then advise the GP that an annual ECG is needed. Subsequent ECGs are then the responsibility of the GP if they continue the prescribing.

- 2.3 The following action should be taken if a patient is found to have a prolonged QTc interval:

If repeat baseline 12-lead ECGs show QTc \geq 460 ms and the patient has had an unexplained syncopal episode:

Do not use QT prolonging drugs

Refer to cardiology

If baseline 12-lead ECG shows QTc of 480 - 499 ms

Consider an alternative drug that does not cause QT prolongation OR monitor QT interval monthly

Correct electrolyte imbalances

Consider referral to cardiology

If follow-up 12-lead ECG shows QTc \geq 500 ms and/or absolute increase in QTc \geq 60 ms

Discontinue QT prolonging drug

Correct electrolyte imbalances

Refer to cardiologist

3. References

Psychosis and schizophrenia in adults: prevention and management. NICE Clinical guideline [CG178]. Feb 2014

QTc prolongation with antipsychotics: is routine ECG monitoring recommended? Shah AA, et, Aftab A, Coverdale J. J Psychiatr Pract. 2014 May;20(3):196-206

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Appendix 1 - drugs known to prolong QT interval

No effect at therapeutic concentrations	Low effect	Moderate effect	High effect	Unknown effect
Aripiprazole	Amisulpride	Chlorpromazine	Lithium	Anticholinergic drugs (procyclidine, trihexyphenidyl, etc.)
Benzodiazepines	Bupropion	Clomipramine	Melperone	
Carbamazepine	Citalopram	Clozapine	Methadone	
Duloxetine	Escitalopram	Fluoxetine	Pimozide	Buspirone
Lamotrigine	Flupentixol	Levomepromazine	Quetiapine	Loxapine
Lurasidone	Fluphenazine	Risperidone	Sertindole	Pipotiazine
MAOIs including moclobemide	Haloperidol	Sulpiride	Tricyclics (except clomipramine)	Trifluoperazine
Methylphenidate	Olanzapine	Ziprasidone		
Mirtazapine	Perphenazine			
Paliperidone	Promethazine			
Reboxetine	Trazodone			
SSRI except citalopram/escitalopram	Venlafaxine			
Valproate				
Zuclopenthixol				

(Table taken from the Psychotropic Drug Directory 2016):

This list is NOT exhaustive and further advice should be sought from a member of the pharmacy team or using the link below:

<https://www.crediblemeds.org/>

Other drugs known to prolong QT interval:

<p><u>Antiarrhythmic drugs:</u> Amiodarone Bretylium Disopyramide Dronedarone Flecainide Procainamide Quinidine Sotalol</p>	<p><u>Antiemetics:</u> Domperidone Droperidol Granisetron Ondansetron</p>
<p><u>Antimicrobials</u> Ampicillin Azithromycin Clarithromycin Co-trimoxazole Erythromycin Fluconazole Ketoconazole Moxifloxacin Pentamidine isethionate (Pentacarinat®)</p>	<p><u>Antimalarials:</u> Chloroquine Mefloquine (Lariam®) Quinine</p>