**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 (HbA1c), 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 ≥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 ≥500 ms and/or absolute increase in QTc ≥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


<table>
<thead>
<tr>
<th>Written By</th>
<th>Mental health and cardiology working groups</th>
<th>Spring 2019</th>
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<tbody>
<tr>
<td>Approved By</td>
<td>Dorset Medicines Advisory Group</td>
<td>July 2019</td>
</tr>
<tr>
<td>Date of next review</td>
<td>July 2021 or before, in light of new evidence or information.</td>
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Appendix 1 - drugs known to prolong QT interval

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

**Antiarrhythmic drugs:**
- Amiodarone
- Bretylium
- Disopyramide
- Dronedarone
- Flecaïnide
- Procainamide
- Quinidine
- Sotalol

**Antimicrobials**
- Ampicillin
- Azithromycin
- Clarithromycin
- Co-trimoxazole
- Arythromycin
- Flucloxazole
- Ketoconazole
- Moxiflaxacin
- Pentamidine isethionate (Pentacarinat®)

**Antiemetics:**
- Domperidone
- Droperidol
- Granisetron
- Ondansetron

**Antimalarials:**
- Chloroquine
- Mefloquine (Lariam®)
- Quinine