

Lithium

Mental health shared care guideline

Specialist details

Name: _____
Location: _____
Tel: _____

Patient identifier

Date: _____

Introduction

Indications: Lithium is widely used in primary and secondary care for the following:

- Prophylaxis and treatment of mania
- Prophylaxis of bipolar disorder
- Prophylaxis of recurrent depression where treatment with other antidepressants has failed
- Augmentation of antidepressant therapy (unlicensed use).
- Aggressive behaviour and self-harm

Adult dosage and administration

Lithium must be prescribed by brand and pharmaceutical formulation as preparations vary widely in bioavailability. Patients should be maintained on the same brand and presentation to ensure stable lithium levels. A change in brand or presentation requires the same precautions as initiation of treatment. Lithium liquid should be prescribed by brand, stating the dose as the amount of lithium citrate to avoid dosing errors.

Target serum lithium levels should be set for each patient and the dose individualised depending on serum lithium levels and clinical response. Particular care should be given to ensuring the correct dose and frequency of administration when prescribing or administering lithium.

Lithium carbonate is currently available as:

- **Camcolit**[®] 400mg modified release tablets
- **Liskonum**[®] 450mg modified release tablets
- **Priadel**[®] 200mg and 400mg modified release tablets
- **Lithium Carbonate Essential Pharma**[®] 250 mg film-coated tablets (was Camcolit 250mg immediate release).

Lithium Citrate is currently available as:

- **Priadel**[®] liquid 520mg/5ml
- **Li-Liquid**[®] 509mg/5ml (To avoid overdose, Li-Liquid 1018mg/5ml should not be prescribed).

Monitoring

- Regular monitoring of serum levels is mandatory due to lithium's narrow therapeutic index.
- In people prescribed lithium for the first time, the normal therapeutic range is 0.6 – 0.8 mmol/litre (elderly 0.4 – 0.8mmol/litre).
- A higher target lithium level (0.8 - 1.0 mmol/litre) should be considered for people who have previously relapsed whilst taking lithium, have sub threshold symptoms with functional impairment or acute mania.

More frequent monitoring than recommended below may be required:

- after dose changes
- in elderly patients
- after changes in other medication which may affect Lithium level
- after changes in preparation
- if there is evidence of declining renal function

Blood samples must be taken 12 hours after the previous dose. The time of the sample, total daily dose and the time of the last dose must be noted on the lab request form.

*****Take samples at least 5 days after changes in dose or changes to treatment affecting lithium levels*****

Initiation Phase

Allow at least 5 days after initiation to achieve steady state before sampling for the first lithium level. A target serum lithium level should be set for each patient and the dose adjusted by the prescriber, if necessary, to achieve this target.

The BNF recommends routine serum-lithium monitoring weekly after initiation and after each dose change until concentrations are stable, then every three months thereafter.

Long Term Monitoring

- Measure the person's plasma lithium level every 3 months for the first year. After the first year, 3 monthly monitoring should continue in:
 - older people
 - people taking drugs that interact with Lithium
 - people who have or are at risk of impaired renal or thyroid function, raised calcium levels or other complications
 - people with poor symptom control, or poor adherence, or who are at risk of non-compliance with monitoring schedule
 - people whose last lithium level was 0.8 mmol/litre or higher.

For people who are at low risk of developing toxicity or raised lithium levels, and with good symptom control, frequency of monitoring may be reduced to every six months with the agreement of the mental health specialist and GP.

- Measure the person's weight or BMI (at least annually). Arrange tests for urea and electrolytes including calcium, estimated glomerular filtration rate (eGFR) and thyroid function every 6 months, and more often if there is evidence of impaired renal or thyroid function, raised calcium levels or an increase in mood symptoms that might be related to impaired thyroid function.
- Assess side effects at every visit. Consider referral to specialist renal or endocrinology services if appropriate.

Note: Blood monitoring results are available to view on the Northern Ireland Electronic Care Record

Mental Health specialist responsibilities

- A register of lithium patients should be maintained and should clearly state who is responsible for routine review, monitoring and for acting on abnormal results.
- Where the specialist is responsible for monitoring, they will be responsible for acting on test results and informing the patient's GP immediately of action taken if test results are abnormal.
- Confirm the diagnosis and assess risk factors.
- Pre-treatment tests – U&E, eGFR, calcium, free T4, TSH, weight or BMI, FBC. ECG if indicated.
- Educate patient and/or carer. Provide "Lithium Therapy- Important Information for Patients" pack and update patient monitoring record book with result of regular tests.
- Advise GP how to initiate treatment.
- If GP agrees, responsibility for monitoring may pass to GP - communicate as per [Lithium Care pathway](#).
- Provide GP with advice and support in the event of abnormal monitoring results.
- Communicate all test results and side effects to GP as per [Lithium Care pathway](#).
- Review patient at agreed regular intervals (as determined by mental health specialist).
- Advise GP on how and when to discontinue treatment.

Primary care responsibilities

- A register of lithium patients should be maintained and should clearly state who is responsible for routine review, monitoring and for acting on abnormal results.
- Provided monitoring results are satisfactory, provide the patient with repeat prescriptions - specifying strength, brand and presentation.
- Monitor mental state and refer to mental health specialist for advice if treatment is ineffective.
- Check for side effects, altered risk factors and signs of lithium toxicity at each appointment.
- Dose Adjustment – where the GP is clear that this is necessary, any change must be communicated in writing to the mental health specialist – if in doubt, seek specialist's advice.
- Temporarily reduce dose or discontinue lithium in serious diarrhoea, vomiting or infection (especially if sweating profusely) – if in doubt, seek specialist's advice.
- Review concomitant medication for possible interaction with lithium.
- When responsibility for monitoring is transferred from mental health specialist, primary care will be responsible for monitoring and acting on: lithium levels, renal function, free T4, TSH, calcium, weight or BMI according to guidelines above and informing the specialist immediately of abnormal lithium levels and action taken.
- Communicate all test results and action taken, if any, to mental health specialist, as per [Lithium Care pathway](#).
- Communicate any changes to medication which may result in a potentially hazardous interaction with lithium.
- Update patient monitoring record book with results of regular tests.

Adverse effects, precautions and contraindications

Adverse effects

The most common side effects of lithium include: GI disturbances (eg. nausea, diarrhoea, dry mouth), fine tremor, thirst, polyuria, Polydipsia, weight gain, oedema. These may be short term and can often be prevented or relieved by a moderate reduction in dose.

Refer to the SPC for a full list of adverse effects

Toxicity

- It is vital to be alert for signs of lithium toxicity, which can be fatal. These include: blurred vision, muscle weakness, drowsiness, coarse tremor, slurred speech, ataxia, confusion, convulsions, nausea, vomiting and ECG changes.
- Toxicity can be associated with serum levels over 1.5mmol/litre but **can occur without a rise in serum level**. It is important to **“treat the patient not the level”**.
- A number of factors may increase the risk of lithium toxicity including: drug interactions (see below), renal disease, concomitant diarrhoea or vomiting, other causes of dehydration, sodium depletion.

If toxicity is suspected:

- Stop lithium immediately
- Check lithium levels, serum creatinine, U&Es
- Refer to hospital / A&E if clinical condition warrants
- Seek advice from psychiatrist for re-initiation of lithium.

Precautions

Abrupt cessation of lithium is strongly associated with manic relapse. For planned cessation of therapy, lithium should be withdrawn over two to four weeks.

Lithium should be stopped 24 hours prior to surgery and restarted as soon as renal function and fluid balance return to normal. Ensure specialist is informed of any such changes.

In order to maintain a stable electrolyte balance, diet and fluid intake should remain normal. This is especially important in hot weather or work environment. Avoid major dietary changes.

Pregnancy / contraception

Women of childbearing potential taking lithium should be advised to use effective contraception. Patients discovered or planning to become pregnant should be referred to the relevant mental health specialist at the earliest opportunity.

Contraindications

Relative and absolute contraindications include: pregnancy, breast-feeding, severe renal impairment, cardiac disease, cardiac insufficiency, family or personal history of Brugada syndrome, untreated hypothyroidism, conditions with sodium imbalance such as Addison's disease.

Common drug interactions

Avoiding drug interactions

Healthcare professionals should check the potential for interactions with lithium using the most up-to date sources available.

Patients should be advised to check with their doctor or pharmacist that any new medicine (in particular those to treat pain) that is prescribed by a doctor or bought in a pharmacy or other shop, is safe to take with lithium.

Effect of interaction	Drug group	Interacting drug	NPSA alert advises particular care
Increase in lithium levels	antibiotics	metronidazole, tetracyclines, co-trimoxazole	
	NSAIDs	e.g. ibuprofen, diclofenac	!
	ACE Inhibitors	All ACE inhibitors and angiotensin II antagonists	!
	diuretics	thiazide, loop and potassium sparing diuretics	!
Decrease in lithium levels	xanthines	aminophylline, theophylline, caffeine	
	sodium salts	e.g. antacids containing sodium bicarbonate, urinary alkalinising agents	!
	diuretics	acetazolamide	
Other (No change in serum levels)	antiepileptics	carbamazepine, phenytoin	
	methyl dopa		
	calcium channel blockers	diltiazem, verapamil	
	antidepressants	SSRIs and tricyclics	
	antipsychotics	e.g. clozapine, haloperidol, phenothiazines, sulpiride	

Many of these combinations can be used safely in clinical practice but additional monitoring may be needed especially on initiation, discontinuation or dose change. GPs should liaise with the mental health specialist for further advice.

Communication

For any queries relating to this patient's treatment with lithium, please contact the specialist named at the top of this document.

This information is not inclusive of all prescribing information and potential adverse effects.
Please refer to full prescribing data in the SPC or the BNF