Administration of Oral Medicines to Orthopaedic Trauma Patients During the Pre-Operative Nil by Mouth Period	University Hospitals of Leicester NHS NHS Trust Trust Ref: C54/2015

0. Changes made to earlier version of this document:

Rearrangement of table to list drugs by class (cardiac, neurological and psychiatric, immunosuppressants, analgesics, anti-coagulants and anti-platelet drugs, anti-diabetic drugs, drugs for acid reflux, contraception, thyroid disease).

1. Introduction and Who Guideline applies to

This guideline has been produced in response to variations in practice, in the absence of easily available up-to-date guidance. On occasions, Nil By Mouth (NBM) status has been recorded as a reason for the omission of medications which patients would have benefited from receiving. The aim of this guideline is to improve the administration of required medications in the NBM period.

This guideline was developed for emergency orthopaedic trauma in-patients. It does not apply to elective patients.

This guideline relates to the oral administration of prescribed medicines during the pre-operative NBM period.

This guideline does not include an exhaustive list of all medicines which may be prescribed. If there is doubt about whether any prescribed oral medicine should be given during the NBM period, the prescriber should be consulted.

This guideline is not intended as a guide for prescribing practitioners; doctors and nurses caring for trauma patients should be aware that

- This guideline does not address the question of which medicines to prescribe. Any queries which the team responsible for the patient may have in relation to this should be discussed with an appropriate specialist.

- The indication for all medications should be established at the time of prescription and must be explicit in the case of warfarin, or other oral anticoagulants and anti-platelet agents. Where necessary, prescription decisions around anticoagulant and anti-platelet drug should be made after consultations with cardiology, haematology, surgery, anaesthesia and other relevant specialities

2. Guideline Standards and Procedures

In general it is safe for a patient to take oral medication, with a small amount of water, in the pre-operative NBM period, provided that they have a safe swallow, have normal gastro-intestinal function and their clinical condition has not deteriorated since the medication was prescribed (e.g. an antihypertensive for someone who has become hypotensive).

In addition, UHL Guidelines and Policies available on the Trust website for specific circumstances include:

- Management of Patients on Anticoagulants Undergoing Surgery
- Warfarin Bridging Therapy for Elective Surgery
- Warfarin Bridging Therapy for Elective Surgery in Patients With Prosthetic Heart Valves
- Guidelines for the Management of Adults with Diabetes Undergoing Surgery and Elective Procedures
- Acute Alcohol Withdrawal Management Guideline
- Resources for Methadone dose confirmation

DRUGS		COMMENTS
Cardiac medications	Anti-anginals (including calcium channel blockers, beta-blockers, nitrates, nicorandil	ADMINISTER (cessation may risk angina)
	Anti-arrhythmics (including digoxin, beta blockers, diltiazem)	ADMINISTER (cessation may risk peri-operative arrhythmia)
	ACE Inhibitors (e.g. ramipril, enalapril, lisinopril, captopril)	OMIT (can cause profound hypotension perioperatively. Consult anaesthetist if concerns regarding hypertension.)
	Angiotensin II inhibitors (e.g. losartan, candesartan)	OMIT (can cause profound hypotension perioperatively. Consult anaesthetist if concerns regarding hypertension.)
	Anti-hypertensives (e.g. amlodipine, nifedipine, atenolol, bisoprolol, hydralazine, nicorandil)	ADMINISTER unless National Early Warning Score positive for hypotension or evidence of dehydration: IN BOTH CASES inform ward doctor see also below, Diuretics
	Beta-blockers	ADMINISTER unless National Early Warning Score positive for hypotension or bradycardia IN BOTH CASES inform ward doctor
	Diuretics: Thiazides e.g. bendroflumethiazide; and Loop Diuretics e.g. frusemide Potassium sparing diuretics e.g. amiloride	ADMINISTER unless National Early Warning Score positive for hypotension or evidence of dehydration: IN BOTH CASES inform ward doctor OMIT (these can precipitate preoperative hyperkalaemia)
Neurological and Psychiatric	Anti-epileptics (including	ADMINISTER Cessation may increase risk of epileptic seizures

	carbamazepine and sodium valproate)	
	Anti-parkinsons drugs	ADMINISTER (see guideline http://insitetogether.xuhl-tr.nhs.uk/pag/pagdocuments/Parkinson's%20Disease%20Medication%20UHL%20Guideline.pdf) Refer to doctor or pharmacist if unable to take by mouth: consider other routes.
	Antipsychotics (apart from clozapine)	ADMINISTER
	Clozapine	OMIT from 24 hours pre-operative and restart within 48 hours at normal dose
	Lithium	Discuss with prescriber and inform anaesthetist. OMIT 24 hours before major surgery, may be given if minor surgery. Renal function, electrolyte balance and lithium levels should be monitored perioperatively. Lithium toxicity is made worse by sodium depletion. Lithium may cause diabetes insipidus.
	Anxiolytics (e.g. diazepam, midazolam, chlordiazepoxide)	ADMINISTER Unless drowsy or respiratory depression in which case inform ward doctor.
	Antidepressants	ADMINISTER **EXCEPT** Monamine Oxidase Inhibitors (eg phenelzine, moclobemide) **discuss with anaesthetist**
	Dementia medications (e.g. anticholinesterases galantamine and rivastigmine)	OMIT - galantamine and rivastigmine, as these can prolong the action of depolarising muscle relaxants ADMINISTER - donepezil
Immunosuppressants	Steroids (e.g prednisolone)	ADMINISTER, inform anaesthetist
	Anti-rejection (e.g. tacrolimus, sirolimus)	ADMINISTER
	Anti-TNF (e.g. infliximab, etanercept, adalimumab)	DISCUSS WITH SURGICAL TEAM – consider discussion with specialist team. Cessation should be balanced by risk of disease flare up from cessation vs. risk of wound healing/infection from continuation
	Ciclosporin, methotrexate, hydroxychloroquine	ADMINISTER – ciclosporin, methotrexate (in the absence of renal failure and opportunistic infection)
	Azathioprine and 6-mercaptopurine	Consider discussion with the specialist team.
Analgesics	Neuropathic agents	ADMINISTER

	(e.g. gabapentin, pregabalin)	
	Opioids (e.g. morphine, oxycodone, codeine, tramadol, buprenorphine/fentanyl patch)	ADMINISTER, unless drowsy or respiratory depression: inform ward doctor. Refer to Trust guideline for Methadone dose confirmation resources.
	Paracetamol	ADMINISTER
	Non-steroidals (except aspirin)	May be suitable for selected patients, ward doctor or anaesthetist to advise in individual cases.
Anticoagulant and anti-platelet drugs	Anti-platelet drugs (including Aspirin, Clopidogrel, Prasugrel, Ticagrelor, Dipyridamole)	ADMINISTER, but note THIS IS NOT A PRESCRIBING GUIDE Indication MUST be identified on clerking. Risks of stopping must be weighed against risks of bleeding. Cardiologist MUST be consulted in cases of coronary stenting within one year, if stopping is considered.
	Oral anticoagulants: Warfarin and Direct Oral Anticoagulants (including Dabigatran, Apixaban, Rivaroxaban)	Usually omitted, discuss with surgical team if still prescribed Indication MUST be identified on clerking. If bridging therapy with heparin is required, refer to Trust policy. Follow Trust guideline on anticoagulation in neck of femur fracture patients. If uncertain discuss with cardiologist / haematologist responsible for anticoagulation.
Anti-diabetic drugs		Follow Trust guideline on perioperative management of diabetes medication
Drugs for acid reflux	Eg omeprazole, lansoprazole AND H2 receptor antagonists (including ranitidine)	ADMINISTER
Contraception	Progesterone-only oral contraceptive pill	ADMINISTER
	OCP and HRT	Ask ward doctor to discuss with patient (risk of VTE, need for alternative contraception if OCP stopped). Refer to VTE prophylaxis guidance

		http://insitetogether.xuhl-tr.nhs.uk/pag/pagdocuments/Venous%20Thromboprophylaxis%20UHL%20Musculoskeletal%20Guideline.pdf
Thyroid Disease	Levothyroxine	ADMINISTER
	Anti-thyroid medications (e.g. carbimazole, propylthiouracil)	ADMINISTER

3. Education and Training

No new skills are required to implement the guideline. Information will be cascaded through senior staff to orthopaedic trauma wards, and medical wards which may on occasion accept trauma patients.

4. Monitoring Compliance

What will be measured to monitor compliance	How will compliance be monitored	Monitoring Lead	Frequency	Reporting arrangements
Medicines not given in 6 hours before surgery with reason logged as 'NBM'	MedChart EPMA system		Every 6 months	

5. Supporting References (maximum of 3)

- UHL surgical handbook
- British National Fomulary 68th edition.

6. Key Words

NBM, trauma, oral, medicines

CONTACT AND REVIEW DETAILS	
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Details of Changes made during review:	