Iloprost - Intravenous Infusion - Full Clinical Guideline - Derby Only

Ref No: CG-T/2010/127

Purpose of guideline
To ensure good clinical practice when prescribing Iloprost for use in critical limb ischaemia (CLI) and severe Raynauds syndrome

Background
Iloprost is a prostacyclin analogue which acts as both a vasodilator and a platelet aggregation inhibitor.

Iloprost is unlicensed in the UK, but indicated for the treatment of patients with severe peripheral arterial occlusion at risk of amputation and in whom surgery or angioplasty is not possible.

Aim and scope

- To provide guidance for the prescribing doctor when iloprost treatment is recommended by a consultant vascular surgeon (or hand surgeon in the case of ischaemic digits)
- To provide a guide for nursing staff on the methods of administration, titration and monitoring.

This guideline is split into two sections

1. **Guidance for prescribing doctor**
2. **Guidance for nurse administering the infusion**

1. Guidance for Prescribing Doctor

Assessment prior to therapy
Full blood count
Pulse & blood pressure
History & examination to elicit presence of infection or previous adverse reaction to treatment.
Review of current medicines; including anticoagulants, antiplatelets, NSAIDs and antidepressants

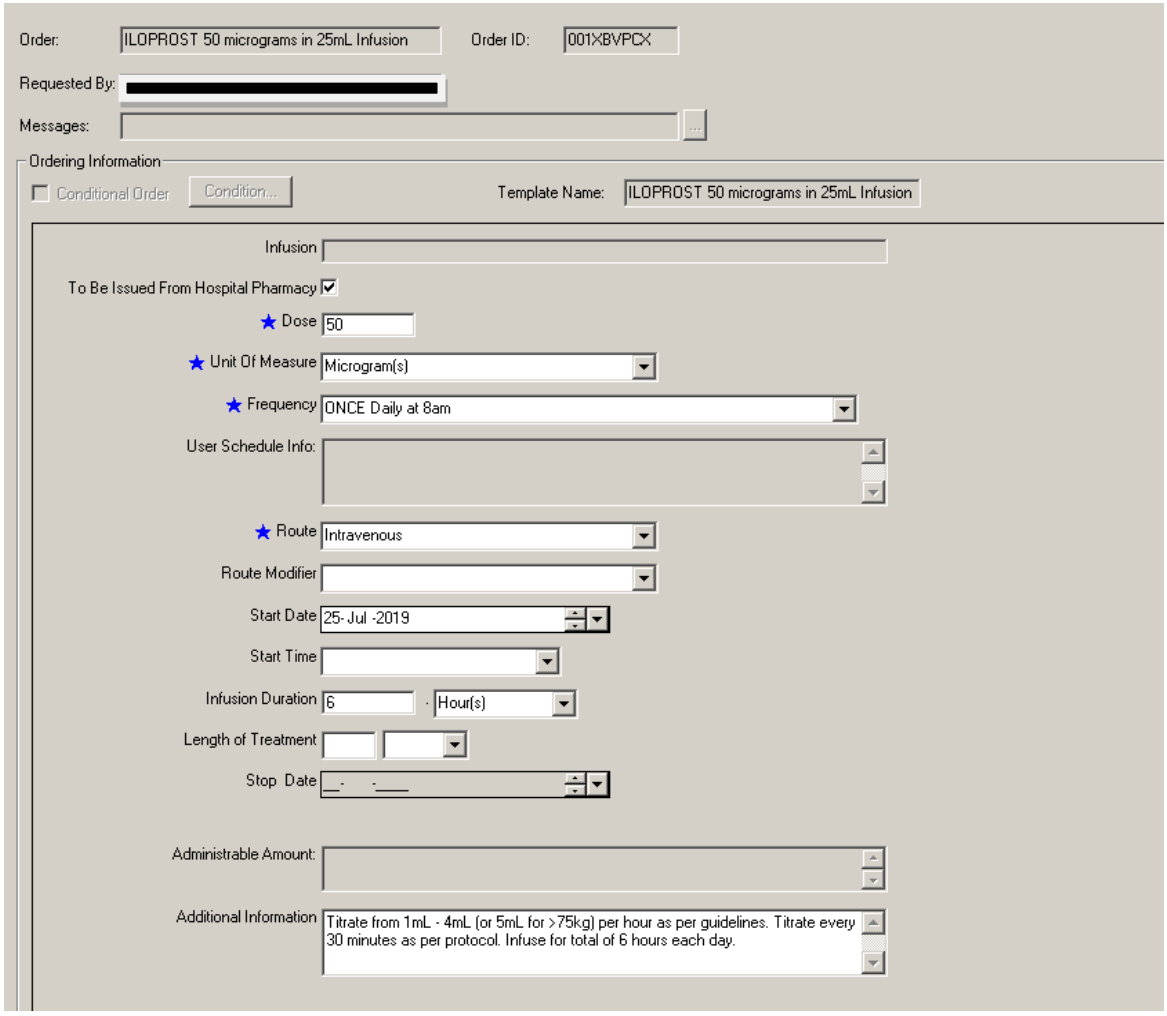
Contraindications[1]
1. Hypotension
2. Previous severe adverse reaction
3. Pregnancy and lactation
4. Conditions where the effects of iloprost on platelets might increase the risk of haemorrhage (e.g. active PUD, trauma, intracranial haemorrhage)
5. Severe coronary artery disease and unstable angina or CCF
6. Pulmonary oedema

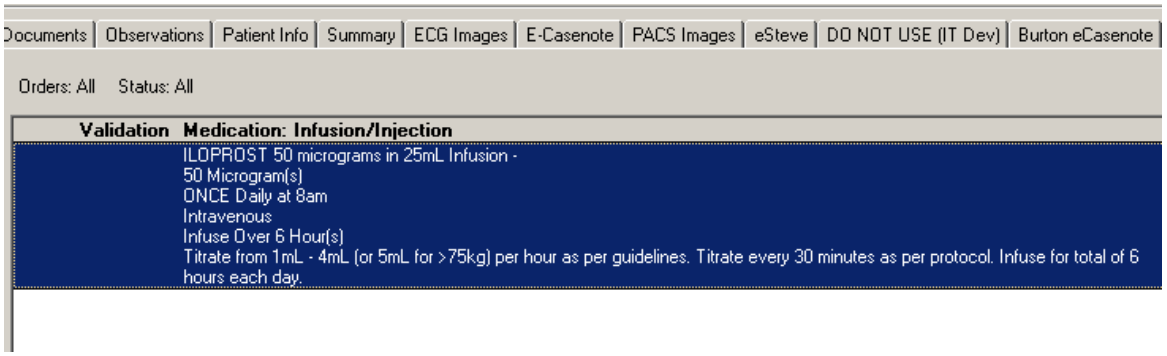
Cautions
- Counselling of patient regarding side effects of iloprost treatment should take place before the first treatment. The patient should be discussed with the consultant if systemically unwell.
- The rate of infusion should be halved in patients with liver cirrhosis.[1]
- As iloprost inhibits platelet function, use with heparin and warfarin (and inhibitors of platelet aggregation) may increase the risk of bleeding. If bleeding occurs then iloprost should be stopped.
- Review all current medicines that increase risk of bleeding upon initiation of iloprost

Access: A 21 gauge (green) cannula sited in a large vessel (e.g. forearm or anticubital fossa) is advised due to recognised problems with local irritation at the IV site. A 5mg GTN patch may be used proximal to infusion site if IV access is poor and should be applied at least 2 hours prior to the infusion and removed as soon as the 6 hour infusion is complete.

Prescription:

Prescribe the iloprost infusion on the electronic prescribing system (iCM) as illustrated below.





- Routine medication can be administered concurrently though caution with anticoagulant (see cautions above) and consider withholding antihypertensives if baseline BP is low. Prophylactic doses of LMWH may be continued if the consultant deems this appropriate.
- Anticipatory analgesia and antiemetics (usually Paracetamol and Metoclopramide) may help to minimise side effects and therefore optimise the rate of infusion.

Length of Course

The length of course previously used within the trust has generally been 5-7 days. Longer courses have been reported in the literature for critical limb ischaemia[1,2,3,5,6] and extended treatment may be considered at the discretion of the consultant.

Dose reductions or cessation of treatment:

For mild effects tolerated by patient (e.g. flushing, headache, nausea):
Continue & Monitor

For moderate effects (hypotension, vomiting, pain in affected limb):
Reduce rate by 1ml/hour & Monitor

For severe effects (e.g. significant drop in BP/confusion/agitation/ arrhythmias)
Stop infusion – discuss with consultant.

2. Guidance for Nurse administering the infusion

- Iloprost will be supplied by pharmacy daily (50 microgram in 25ml Pre-filled syringe).
- **Ward 308 and EPU** – Nurses on this ward are trained to manufacture iloprost infusion on the ward. Pharmacy will supply the vials only to this ward
- Treatment is continued for **6 hours each day** and is then discontinued irrespective of the volume remaining in the syringe. The syringe may then be discarded.
- The patient should remain lying or sitting down in bed, during and immediately after receiving the infusion and should be escorted to and from the bathroom where possible.

Table 1 - Dose Titration. All changes to the infusion rate should be signed for on the infusion checklist in the patients nursing file.

	Time	Monitoring	Infusion
Step 1	Before Treatment	Take baseline pulse & BP. Counsel patient on side-effects and to remain sitting/lying	Start infusion at 1ml/hour
2	After 30 mins	Check for side effects, Pulse & BP*	If OK Increase rate to 2ml/hour
3	60 mins	Check for side effects, Pulse & BP*	If OK Increase rate to 3ml/hour
4	90 mins	Check for side effects, Pulse & BP*	If OK Increase rate to 4ml/hour
5	2 hours	Check for side effects, Pulse & BP*	If <75kg: Maintain rate at 4ml/hour Or >75kg: Increase rate to 5ml/hour & recheck observations after 30 minutes
6	4 hours	Check for side effects, Pulse & BP*	If OK Maintain rate as above
7	6 hours END OF INFUSION	Only continue to monitor after 6 hours if side effects persist	Stop infusion & discard any remaining contents in the syringe
***If side-effects or BP/pulse changes occur then reduce rate by 1ml/hour.** The rate reduction may not be necessary if mild side-effects such as facial-flushing/headache occur and are tolerated by the patient. In the event of serious side-effects (e.g. dramatic drop in BP, agitation, arrhythmias) the infusion should be stopped and a doctor in the team bleeped to review patient			

Summary of Side Effects[1]

Headaches, cough facial flushing, hypotension, nausea, vomiting, diarrhoea, dizziness, hyperhidrosis, paraesthesia, pain in affected limb(s), local irritation at site of IV infusion. Confusion, agitation and arrhythmias have been reported. Allergic reactions may occur. Angina may be provoked.

References

1. Colonis Pharma Ltd. . Summary of Product Characteristics: Ilomedrin (iloprost) 2019
2. Dormandy JA. Prostanoid drug therapy for peripheral arterial occlusive disease: The European experience. Vascular medicine 1996, 1;2:155-158
3. Melillo E & Nuti M et al. Medical therapy in critical lower limb ischaemia when revascularisation is not feasible. Giornale iltaliano di cardiologia 2006 7;5:317-335
4. Loosemore TM et al. A meta-analysis of randomised placebo controlled trials in Fontaine stages III & IV peripheral occlusive arterial disease. Int Angiol 1994; 13: 133-42
5. Banyai S, Jenelten R et al. Outpatient treatment of severe peripheral ischaemia with intravenous intermittent low-dose iloprost. An open pilot study. Int Angiol 2002 21;1:36-43
6. Sabovic M. Treatment of chronic ischaemia of a replanted thumb. Journal of Hand Surgery 2002 27;5:481-483

Documentation Control

<table>
<tr><td>Reference Number
CG-T/2010/127</td><td colspan="2">Version:
1.0</td><td>Status
Final</td><td>Author:
Divisional Lead Pharmacist, Surgical Services
Consultation with:
Consultant Vascular Surgeons
Consultant Hand Surgeons</td></tr>
<tr><td rowspan="3">Version / Amendment History</td><td>Version</td><td>Date</td><td>Author</td><td>Reason</td></tr>
<tr><td>1.0</td><td>Oct 19</td><td>Beenash Chaudhry, Clinical Pharmacist
Mr Ganesh Kuhan, Consultant Vascular Surgeon</td><td>Review</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="5">Intended Recipients: State who the Clinical Guideline is aimed at – staff groups etc.</td></tr>
<tr><td colspan="5">Training and Dissemination: How will you implement the Clinical Guideline, cascade the information and address training</td></tr>
<tr><td colspan="5">Linked Documents: State the name(s) of any other relevant documents</td></tr>
<tr><td colspan="5">Keywords:</td></tr>
<tr><td colspan="3">Business Unit Sign Off</td><td colspan="2">Group: Surgical BU
Date:17/07/2020</td></tr>
<tr><td colspan="3">Divisional Sign Off</td><td colspan="2">Group: Surgical Division (DQRG)
Date:26/05/2021</td></tr>
<tr><td colspan="3">Review Date and Frequency</td><td colspan="2">April 2023
Extended to June 2024</td></tr>
<tr><td colspan="3">Contact for Review</td><td colspan="2">Divisional Lead Pharmacist, Surgical Services</td></tr>
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