NHS
Greater Glasgow and Clyde

# CLINICAL GUIDELINE

# Diagnosis and Treatment of Iron Deficiency Anaemia in Adults

A guideline is intended to assist healthcare professionals in the choice of disease-specific treatments.

Clinical judgement should be exercised on the applicability of any guideline, influenced by individual patient characteristics. Clinicians should be mindful of the potential for harmful polypharmacy and increased susceptibility to adverse drug reactions in patients with multiple morbidities or frailty.

If, after discussion with the patient or carer, there are good reasons for not following a guideline, it is good practice to record these and communicate them to others involved in the care of the patient.

| | |
|---|---|
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**Important Note**:

The online version of this document is the only version that is maintained.
Any printed copies should therefore be viewed as 'Uncontrolled' and as such, may not necessarily contain the latest updates and amendments.

## Key Messages in the Management of IDA

**Oral iron is the 1st line treatment of choice**

*The clinical benefit of treatment should be considered*

**Determine underlying cause**

*Investigations to determine the underlying cause should be considered in parallel with treatment*

**Intravenous iron should be reserved as a second line treatment option**

*For the vast majority of patients treatment with oral iron is appropriate*

### Scope of guideline

This guideline focuses on the diagnosis and treatment of iron deficiency anaemia (IDA) in adult patients (16 years and over) in acute and primary care settings. The treatment of IDA is covered to include the place of oral and intravenous (IV) iron replacement therapy.

For the purpose of the guideline the following clinical situations are not covered:

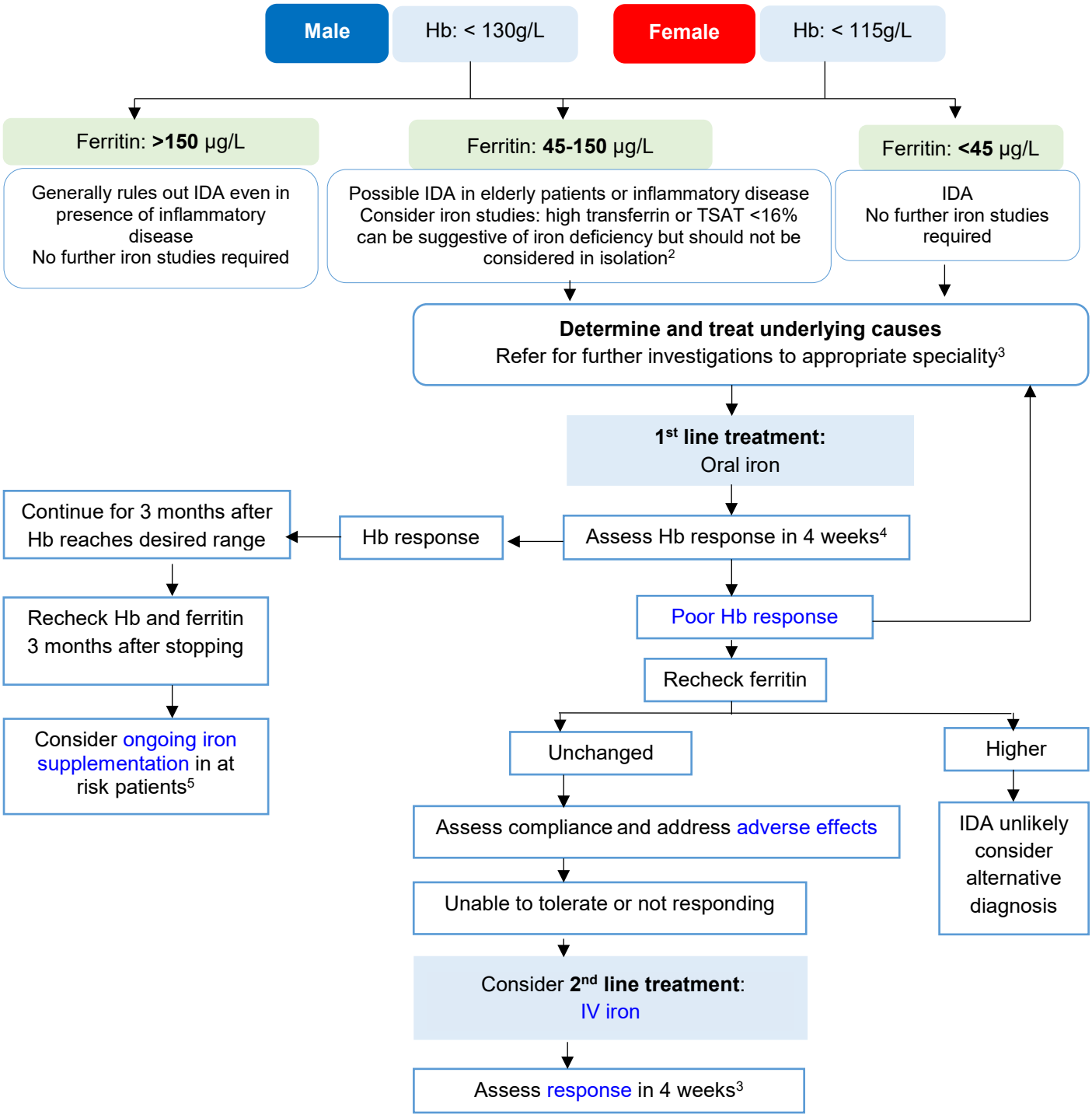
- pregnancy and postpartum anaemia [see Prevention and Management of Iron Deficiency Anaemia in Pregnancy and the Puerperium (1195) | Right Decisions]
- surgery/trauma,
- paediatrics (<16 years) [see Anaemia in Children with Chronic Kidney Disease (047) | Right Decisions]
- patients with chronic kidney disease (CKD) stages 4-5.

### Diagnostic tests used to establish IDA

If haemoglobin (Hb) is low, blood iron studies can identify if this is caused by iron deficiency. Serum ferritin (SF) is the most useful test in confirming the diagnosis of IDA. The test can be difficult to interpret if infection or inflammation is also present, as levels can be high even in the presence of iron deficiency. If SF results are equivocal, practitioners should consider monitoring the haemoglobin (Hb) concentration in response to a trial of oral iron.

Serum iron, transferrin levels and transferrin saturation (TSAT) are labile measurements and not reliable indicators of low iron stores. They are useful in investigation of high SF values and possible iron overload. TSAT can also be used in the investigation of anaemia in heart failure and renal failure and may be considered in elderly patients and those with inflammatory disease where SF is non-diagnostic (see flowchart).

# Diagnostic and Treatment Algorithm for IDA
## (excluding patients with heart failure with reduced ejection fraction[1])




Abbreviations: Hb, haemoglobin; IDA, iron deficiency anaemia; TSAT, transferrin saturation

[1] IV iron should be considered in heart failure with reduced ejection fraction as per criteria on page 6

[2] TSAT should not be considered in isolation as it is a labile measurement and can be impacted by a recent iron rich meal and diurnal fluctuations.

[3] Refer to British Society of Gastroenterology guideline for the management of IDA in adults (available at www.bsg.org.uk)

[4] Hb should rise by at least 20g/L over 4 weeks.

[5] Recurring anaemia (such as in elderly person) and further investigations are not indicated or appropriate, an iron-poor diet (e.g. vegans), malabsorption (e.g. coeliac disease), menorrhagia, had a gastrectomy.

Fletcher, A., Forbes, A., Svenson, N., Wayne Thomas, D. A British Society for Haematology Good Practice Paper (2022), Guideline for the laboratory diagnosis of iron deficiency in adults (excluding pregnancy) and children. Br J Haematol, 196: 523-529
Rockey DC, Altayar O, Falck-Ytter Y, Kalmaz D. AGA Technical Review on Gastrointestinal Evaluation of Iron Deficiency Anemia. Gastroenterology. 2020 Sep;159(3):1097-1119

## Treatment of IDA

Treatment with iron replacement therapy should be considered for patients with clinically relevant IDA in whom the clinical benefit of treatment outweighs any risks. Iron replacement can begin once deficiency is confirmed, but the underlying cause of the deficiency should be sought and treated. Iron replacement should not be deferred while awaiting investigations for IDA unless colonoscopy is imminent.

| | | |
|---|---|---|
| **1st line treatment choice** | Oral iron | |
| **2nd line treatment choice** | IV iron | **Hospital setting only**<br>*reserved for patients who meet inclusion criteria* |

*Dietary advice*

Patients should be educated on their dietary iron intake, including details of iron rich foods and factors which may inhibit or promote iron absorption. This should be consolidated by the provision of an information leaflet (see example).

### Oral iron therapy

*Product of choice and dosage*

Traditional oral iron salts (ferrous sulphate, ferrous fumarate and ferrous gluconate) are inexpensive, safe and readily available and remain the standard therapy for IDA. Hb regeneration is little affected by the type of salt used provided sufficient iron is given, and in most patients the speed of response is not critical. Choice of preparation is thus usually decided by the incidence of side effects and cost.

Based on the available literature, a once daily dose of 50–100 mg of elemental iron (e.g. ferrous sulphate 200mg once a day or ferrous fumarate 210mg once a day) taken in the fasting state is recommended for initial treatment. Patients should be instructed in order to maximise gut absorption, tablets should be taken in the morning on an empty stomach with either water or fresh orange juice. Tea, coffee, cola, dairy rich foods and antacids should be avoided for at least the subsequent two hours.

*Monitoring response*

Early monitoring should detect those patients not responding to or intolerant to oral iron. Hb levels should be rechecked within the first 4 weeks of iron supplement treatment to assess the person's response. The Hb concentration should rise by at least 20g/L over 3–4 weeks.

After the restoration of Hb and iron stores, the blood count should be monitored periodically (e.g. 3-monthly for 12 months and then 6-monthly for 2-3 years) to detect recurrent IDA.

*Inadequate response*

Intolerance and/or ineffectiveness to oral iron should be managed promptly and appropriately. Failure to respond may indicate:

- Continued blood loss – investigate and treat underlying cause(s).
- Wrong diagnosis – recheck ferritin and reassess.
- Non-compliance – assess and address adverse effects.
- Malabsorption.

Other reasons for poor response include; systemic disease, bone marrow pathology and haemolysis.

*Adverse effects*

Dose-related adverse effects (gastrointestinal disturbance) from taking an iron supplement are commonly experienced and a common cause of non-compliance with treatment. These irritant adverse effects are usually related to the amount of elemental iron taken rather than the type of preparation. Patients should be advised that they may experience adverse effects but these usually settle down with time – the importance of compliance with treatment should be stressed.

If oral iron is not tolerated, consider reducing the dose to one tablet on alternate days, or trying an alternative salt/formulation with a lower content of elemental iron. If these measures fail, they should return to discuss other treatment options.

*Drug interactions*
Iron salts are not well absorbed orally, and food may further impair their absorption. The absorption is reduced if taken concurrently with: zinc or magnesium salts (e.g. in antacids), calcium (e.g. in milk and dairy products), tannins (e.g. in tea, coffee, cocoa and cola), phytates (present in cereal grains, legumes, nuts and seeds).

Oral iron supplements can reduce the absorption of some drugs if taken concurrently (including tetracyclines, quinolones and bisphosphonates) reducing bioavailability and clinical effect. A suitable interval to separate administration is advised with some medicines. For further details see individual summary of product characteristics (SPCs) (available from www.medicines.org.uk) and GGC guideline Oral Tetracycline and Fluoroquinolone Antibiotic Interactions with Multivalent Cation Containing Products, Management of (1094) | Right Decisions.

*Treatment duration*
After normalisation of the Hb, oral iron needs to be continued to replenish the iron stores. Traditionally it has been recommended that oral iron is continued for 2–3 months to do this. However, the duration required and indeed the appropriate measure of true iron repletion are both unclear. In healthy, almost iron-replete subjects, 2 months of continued iron may be sufficient. In patients with chronic disease, continuing blood loss, impaired absorption or gastrointestinal (GI) inflammatory disease (where iron is lost from the GI mucosa), it is likely that a longer period would be required.

*Ongoing iron supplementation*
Consider an ongoing prophylactic dose of oral iron (see BNF) in patients who are at particular risk of IDA.
This may be beneficial in patients who have:

- Recurring anaemia (such as in elderly person) and further investigations are not indicated or appropriate**.**
- An iron-poor diet (e.g. vegans)**.**
- Malabsorption (e.g. coeliac disease)**.**
- Menorrhagia**.**
- Had a gastrectomy.

## Intravenous iron therapy

IV iron therapy should only be considered as a second line treatment option in a hospital setting. It does not produce a faster Hb response than oral iron provided that the oral iron preparation is taken reliably and is absorbed adequately. IV iron therapy is rarely indicated, may produce severe adverse effects, and should be reserved for patients who meet the inclusion criteria defined below.

IV iron therapy should be initiated by a consultant, specialist trainee or nominated non-medical prescribers (NMPs). IV iron should **not** be administered out of hours or when adequate supervision is unavailable.

*Inclusion criteria*

IV iron therapy is considered for the treatment of IDA in adults in the following situations:

- Genuine intolerance to oral iron preparations. Iron preparations with a low content of elemental iron must be tried before acceptance of genuine intolerance to oral iron.
- Severe IDA and concern regarding the patient's ability to comply with oral iron treatment.
- Patients with clinically active inflammatory bowel disease (IBD), with previous intolerance to oral iron, with Hb below 100g/L, and in patients who need erythropoiesis-stimulating agents.[2]
- Patients with heart failure (HF) with reduced ejection fraction, New York Heart Association (NYHA) class III with an left ventricular ejection fraction (LVEF) ≤45%, or NYHA class II, LVEF ≤40%, who have a Hb level of 95 to 135g/L and iron deficiency (defined as ferritin <100 micrograms/L or ferritin <300micrograms/L if TSAT<20%).[3]

*Exclusion criteria*

Contraindications and cautions to Monofer® (ferric derisomaltose) and Feristark® (ferric carboxymaltose) are summarised in table 1 and table 2 below. For further details see individual SPCs (available from www.medicines.org.uk).

**Table 1: Contraindications to IV iron**

| | Monofer® | Feristark® |
|---|---|---|
| Hypersensitivity to the active substance, the product itself or any excipients in the product | × | × |
| Serious hypersensitivity to other IV iron products | × | × |
| Non-iron deficiency anaemia | × | × |
| Iron overload or disturbance in utilisation of iron | × | × |
| 1st trimester of pregnancy | × | × |
| Decompensated liver disease | × | |

**Table 2: Cautions to IV iron**

| | Monofer® | Feristark® |
|---|---|---|
| Hypersensitivity reactions[1] | × | × |
| | Risk is enhanced in patients with:<br>• Known allergies (including drug allergies)<br>• Severe asthma<br>• Eczema<br>• Atopic allergy<br>• Immune of inflammatory conditions | |
| Hepatic impairment | × | × |
| Acute or chronic infection | × | × |
| Paravenous leakage | × | × |
| 2nd and 3rd trimester of pregnancy | × | × |
| Hypophosphataemic osteomalacia[2] | | × |

MHRA drug safety updates [1] IV iron and serious hypersensitivity reactions: strengthened recommendations (Aug 2013)
[2] Ferric carboxymaltose (Ferinject®): risk of symptomatic hypophosphataemia leading to osteomalacia and fractures (Nov 2020)

[2] Dignass AU et al., the European Crohn's and Colitis Organisation [ECCO], European Consensus on the Diagnosis and Management of Iron Deficiency and Anaemia in Inflammatory Bowel Diseases, *Journal of Crohn's and Colitis*, 9 (3), March 2015, 211-222

[3] Scottish Intercollegiate Guidelines Network. SIGN 147. Management of chronic heart failure. March 2016.

*Use during infections*

Acute or chronic infection is listed is a caution for both Monofer® and Feristark®. Intravenous iron can provide a nutrient source that supports bacterial growth and may therefore have the potential to exacerbate existing infections. There is conflicting evidence for safety of IV iron infusions during infections, with some meta-analyses showing increased risk of infection and infection related complications while others show no increased risk.[4][5][6][7]

For patients with confirmed or suspected infection who require IV iron, the severity of IDA, urgency of correction and risk of uncorrected IDA should be carefully assessed. If clinically appropriate, defer IV iron administration until the infection has resolved. If urgent treatment is required, proceed with caution and ensure close monitoring for any signs of worsening infection.

*Product of choice*

Most patients will require one or two iron infusion to become replete, dependent on their Hb and weight. To reduce service pressures, the risks associated with each infusion and the need for patients to attend an additional appointment, it is recommended that IV iron is prescribed as a single infusion where possible.

Monofer® (ferric derisomaltose) allows for larger doses to be given in a single infusion. This often allows the entire required dose to be given in one infusion. If it requires to be split across two doses clinical judgement can be used to determine if further laboratory tests could be checked four weeks after the first infusion to assess response and therefore whether small second doses are required.

Feristark® (ferric carboxymaltose) remains an alternate option when Monofer® is not suitable. Feristark® is a generic version of Ferinject® launched in 2026. Due to licence restrictions, patients aged 16-17 should receive Feristark®. An increased risk of persistent hypophosphatemia and osteomalacia is associated with Ferinject® (see MHRA drug safety update Ferric carboxymaltose (Ferinject®): risk of symptomatic hypophosphataemia leading to osteomalacia and fractures). It is recommended to avoid Ferinject® in those with risk factors for hypophosphatemia (e.g. vitamin D deficiency, calcium and phosphate malabsorption, secondary hyperparathyroidism, inflammatory bowel disease and osteoporosis) or patients requiring multiple high doses/long term treatment.

Use of both products is restricted to administration by IV infusion.

For information on how to prescribe and administer the IV iron preparations as infusions:

| | |
|---|---|
| **Monofer®** (ferric derisomaltose) | see here |
| **Feristark®** (ferric carboxymaltose) | see here |

*Interaction with oral iron preparations*

Combined treatment with oral and IV iron may lead to the appearance of highly toxic non transferrin bound iron. It is recommended that oral iron preparations are discontinued at **least 48 hours** prior to IV iron infusions.

The need for oral iron therapy should be reviewed following IV iron replacement. Generally it should not be required following IV iron replacement. If an ongoing prophylactic dose is deemed necessary, oral iron should not be started for at **least 5 days** after the last IV iron infusion.

*Adverse effects*

Refer to individual product SPCs for full details (available from www.medicines.org.uk). All serious suspected adverse drug reactions should be reported to the Medicines and Healthcare products Regulatory Agency (MHRA) via the Yellow Card Scheme. An electronic form is available at https://yellowcard.mhra.gov.uk/.

*Monitoring during infusion*

*Hypersensitivity reactions*

IV iron preparations can cause serious hypersensitivity reactions, these are rare but include life-threatening and fatal anaphylactic and anaphylactoid reactions (see MHRA Drug Safety Update IV iron and serious hypersensitivity

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[4] Litton E, Xiao J, Ho KM. Safety and efficacy of intravenous iron therapy in reducing requirement for allogenic blood transfusion: systematic review and meta-analysis of randomized clinical trials. BMJ. 2013;347:f4822

[5] Shah AA, Donovan K, Seeley C, Dickson EA, Palmer AJR, Doree C, Brunskill S, Reid J, Acheson AG, Sugavanam A, Litton E, Stanworth SJ. Risk of Infection Associated With Administration of Intravenous Iron: A Systematic Review and Meta-analysis. JAMA Netw Open. 2021 Nov 1;4(11):e2133935

[6] Salim SA, Cheungpasitporn W, Elmaraezy A, Jawafi O, Rahman M, Aeddula NR, Tirupathi R, Fülöp T. Infectious complications and mortality associated with the use of IV iron therapy: a systematic review and meta-analysis. Int Urol Nephrol. 2019 Oct;51(10):1855-1865

[7] Avni T, Bieber A, Grossman A, Green H, Leibovici L, Gafter-Gvili A. The safety of intravenous iron preparations: systematic review and meta-analysis. Mayo Clin Proc. 2015 Jan;90(1):12-23

reactions: strengthened recommendations). These reactions can occur even when a previous administration has been tolerated. The steps outlined in the administration checklists should be taken to monitor patients during and for at least 30 minutes after every administration.

If hypersensitivity reactions / signs of intolerance occur during administration, the treatment should be stopped immediately and appropriate management initiated.

*Extravasation*
Paravenous leakage at the infusion site may lead to irritation and potentially **permanent** brown discolouration of the skin. Patients should be informed about the possibility of discolouration and advised to report any signs of irritation or pain at the infusion site immediately (see patient information leaflet).

The most effective safeguard is to visually inspect the infusion site regularly. The steps outlined in the administration checklists should be taken to monitor the infusion site during and for at least 30 minutes following administration.

Paravenous leakage should be suspected if one or more of the following is observed:

- The infusion is not flowing freely or has stopped.
- Swelling, discomfort, burning or pain occurs at the infusion site.

In case of suspected paravenous leakage, treatment requires prompt attention as outlined in table 3 below.

| Table 3: A guide to management of extravasation reactions occurring during administration of IV iron | |
|---|---|
| | Initial when complete |
| STOP the infusion immediately and disconnect the drip, **do not** remove the cannula | |
| Inform medical staff immediately | |
| Aspirate the extravasated drug by connecting a clean syringe to the cannula and drawing back | |
| Mark the extravasation area with a pen and remove the cannula | |
| Elevate the limb (if possible) | |
| Cool the area for 24-48 hours and closely monitor the skin and underlying tissues for changes. | |
| Consider referral to plastic surgery team | |
| Clearly document the management plan in the patient's medical records | |
| Complete a clinical incident form | |

*Communication of treatment*
Treatment with IV iron should be clearly communicated with the patient's GP and other healthcare professionals. This could be via a discharge letter or outpatient clinic letter. It should include details of the treatment received, the second dose required (if to be given) and clearly state arrangements in place for follow up blood monitoring.

*Monitoring response*
It is good practice to recheck Hb and ferritin levels to assess response to IV iron treatment. These should be assessed no earlier than 4 weeks following treatment. Hb levels should rise by at least 20g/L over 4 weeks.

It is the responsibility of the initiating prescriber to ensure arrangements are in place for follow up blood monitoring. This may be arranged via an outpatient clinic or asking the GP to complete. If to be carried out by the GP this must be clearly communicated. The patient should be made aware of follow up plans.

# Prescribing & Administration Information for Monofer® (ferric derisomaltose)

| | |
|---|---|
| Patient name:<br>Date of birth:<br>CHI no.:<br><br>*Affix patient label* | Drug Allergies / Sensitivities<br>None Known ❑ Yes ❑<br><br>Details: ..... |

## Step 1: Calculate WEEKLY dose for intravenous infusion

| | |
|---|---|
| **Patient weight* (kg):** .....<br>*Use actual body weight | **Hb (g/L):** ..... on ..... / ..... / ..... |

### Monofer® doses for range of Hb and body weight

| Weight (kg)* | Hb < 100g/L | | Hb ≥ 100g/L and < 130g/L | |
|---|---|---|---|---|
| | Week 1 | Week 2* | Week 1 | Week 2* |
| 25-49 | 500mg | - | 500mg | - |
| 50-54 | 1000mg | 500mg | 1000mg | - |
| 55-59 | 1100mg | 400mg | 1000mg | - |
| 60-64 | 1200mg | 300mg | 1000mg | - |
| 65-69 | 1300mg | 200mg | 1000mg | - |
| 70-74 | 1400mg | 600mg | 1400mg | 100mg |
| 75-79 | 1500mg | 500mg | 1500mg | - |
| 80-84 | 1600mg | 400mg | 1500mg | - |
| 85-89 | 1700mg | 300mg | 1500mg | - |
| 90-94 | 1800mg | 200mg | 1500mg | - |
| 95-99 | 1900mg | 100mg | 1500mg | - |
| >100 | 2000mg | - | 1500mg | - |

***Dependent on clinical judgement the 2nd dose could await further laboratory tests**

## Step 2: Prescribe as a ONCE ONLY dose on HEPMA

## Step 3: Prescribe on infusion chart

### Monofer® (ferric derisomaltose)

| Vial strength | Infusion fluid | Infusion rate |
|---|---|---|
| 100mg/ml | 100ml sodium chloride 0.9% | 200 ml/hour over 30 minutes |

## Complications

| Hypersensitivity reactions | Extravasation |
|---|---|
| Can be life-threatening<br>Caution is needed with every dose | Can cause PERMANENT brown skin staining |

## Step 4: Complete checklist for administration

| Pre-infusion | *Initial when complete* |
|---|---|
| Oral iron stopped *at least 48 hours* prior to infusion | |
| Patient received information leaflet | |
| Patient aware of risks and benefits and happy to proceed with treatment | |
| Patient aware to notify staff immediately if they:<br>• feel unwell<br>• experience pain / discomfort at PVC site | |
| Facilities for cardio-pulmonary resuscitation available | |
| Adequate supervision available **NOT** for out of hours administration | |

| During infusion | | | |
|---|---|---|---|
| **STOP** infusion immediately if:<br><br>Symptoms of an allergic reaction.<br><br>Infusion is not flowing freely.<br><br>Swelling / discomfort / burning / pain. | Baseline | Observations (NEWS) | |
| | | PVC check* | |
| | | Flush the PVC# | |
| | + 15 mins | Observations (NEWS) | |
| | | PVC check* | |
| | 30 mins post infusion | Observations (NEWS) | |
| | | PVC check* | |
| | | Flush the PVC# | |
| | | Remove PVC | |

*as per PVC care plan #with a minimum of 5ml of 0.9% sodium chloride (using a 10ml syringe) administer using a push pause technique

| Post-infusion | |
|---|---|
| Arrange appointment for subsequent infusion(s) (if required). Minimum of 7 days between infusions | |
| Ensure follow up plan in place to recheck Hb and ferritin after 1 month | |
| Document details of treatment on clinical portal via discharge letter / outpatient clinic letter | |

# Prescribing & Administration Information for Feristark® (ferric carboxymaltose)

| Patient name:<br>Date of birth:<br>CHI no.:<br><br>*Affix patient label* | Drug Allergies / Sensitivities<br>None Known ❑ Yes ❑<br><br>Details: ..... |
|---|---|

## Step 1: Calculate WEEKLY dose for intravenous infusion

**Patient weight* (kg):** .....

*Use actual body weight

**Hb (g/L):** ..... on ..... / ..... / .....

### Feristark® doses for range of Hb and body weight

| Weight (kg)* | Hb < 100g/L | | | Hb ≥ 100g/L and < 130g/L | |
|---|---|---|---|---|---|
| | Week 1 | Week 2 | Week 3 | Week 1 | Week 2 |
| 25-29 | 500mg | 250mg | - | 375mg | - |
| 30-34 | 600mg | 300mg | - | 450mg | - |
| 35-39 | 700mg | 700mg | 100mg | 700mg | 300mg |
| 40-45 | 800mg | 700mg | - | 800mg | 200mg |
| 45-49 | 900mg | 600mg | - | 900mg | 100mg |
| 50-69 | 1000mg | 500mg | - | 1000mg | - |
| ≥70 | 1000mg | 1000mg | - | 1000mg | 500mg |

## Step 2: Prescribe as a ONCE ONLY dose on HEPMA

## Step 3: Prescribe on infusion chart

**Feristark®** (ferric carboxymaltose)

| Vial strength | Infusion fluid and rate |
|---|---|
| 50mg/ml | ≤200mg: 50ml sodium chloride 0.9% given at 200ml/hr over 15 mins<br>>200mg: 100ml sodium chloride 0.9% given at 400ml/hr over 15 mins<br>If fluid restricted consider infusing at a reduced rate (eg over 30 mins) |

## Complications

### Hypersensitivity reactions

Can be life-threatening
Caution is needed with every dose

### Extravasation

Can cause PERMANENT brown skin staining

## Step 4: Complete checklist for administration

| Pre-infusion | Initial when complete |
|---|---|
| Oral iron stopped *at least 48 hours* prior to infusion | |
| Patient received information leaflet | |
| Patient aware of risks and benefits and happy to proceed with treatment | |
| Patient aware to notify staff immediately if they:<br>• feel unwell<br>• experience pain / discomfort at PVC site | |
| Facilities for cardio-pulmonary resuscitation available | |
| Adequate supervision available. **NOT** for out of hours administration | |

| During infusion | | | |
|---|---|---|---|
| **STOP immediately if:**<br><br>Symptoms of an allergic reaction.<br><br>Infusion not flowing freely.<br><br>Swelling / discomfort / burning / pain. | Baseline | Observations (NEWS) | |
| | | PVC check* | |
| | | Flush the PVC# | |
| | + 15 mins | Observations (NEWS) | |
| | | PVC check* | |
| | 30 mins post infusion | Observations (NEWS) | |
| | | PVC check* | |
| | | Flush the PVC# | |
| | | Remove PVC | |

*as per PVC care plan #with a minimum of 5ml of 0.9% sodium chloride (using a 10ml syringe) administer using a push pause technique

| Post-infusion | |
|---|---|
| Arrange appointment for subsequent infusion(s) (if required). Minimum of 7 days between infusions | |
| Ensure follow up plan in place to recheck Hb and ferritin after 1 month | |
| Document details of treatment on clinical portal via discharge letter / outpatient clinic letter | |
| Consider monitoring phosphate levels in patients at risk for hypophosphataemia who require long-term treatment / multiple high-dose infusions | |

# Iron Infusions

## Patient information leaflet

Please read this leaflet carefully and discuss any questions you may have with your doctor or nurse.

### Why am I being treated with this medicine?

Your blood test results show that the amount of iron you have in your blood is low. The most common way to treat this is to take iron by mouth as a tablet or liquid. This works well for most people and is usually tried first. However, some people may need iron to be given straight into the body through a vein. This is called an iron infusion. It might be needed if you:

- are not able to take iron tablets or liquid
- are not responding to iron tablets or liquid or not absorbing them
- if you have chronic heart failure.

### Why is iron important?

Iron is an essential nutrient that your body needs to make red blood cells, which carry oxygen around your body. If you do not have enough iron, you can become anaemic. This can cause tiredness, low energy levels, low mood, feeling faint and breathlessness.

### Do I still need to take iron tablets/liquid?

If you are taking iron tablets or liquid these should be stopped before you receive the infusion. They are usually not needed after the treatment.

### What does the infusion involve?

The treatment takes place in a hospital. A thin plastic tube called a cannula is placed in your vein and attached to an infusion that slowly delivers a liquid solution containing iron into the body.

### Will I feel any pain?

You may feel a slight sting when the cannula is inserted to give the infusion. You should feel no pain during the iron infusion. If you do feel any pain, you should let nursing staff know immediately.

### How long will it take?

It can take up to 60 minutes to complete the infusion. You will be monitored by nursing staff closely before, during and for 30 minutes following the infusion.

### How often will I need an infusion?

Sometimes two iron infusions (given at least one week apart) are needed to fully top up your iron stores.

## What are the most likely side effects?

Generally when side effects do occur, they are mild and settle down on their own. The most common side effects are temporary and include:

- headache, feeling sick or vomiting, muscle or joint pain
- changes in taste (e.g. metallic)
- changes to blood pressure or pulse.

## What are the risks?

Rarely, you may experience a serious allergic reaction. If this happens you may experience some or all of the following symptoms:

- feeling dizzy
- fast pulse
- feeling light headed or faint due to a low blood pressure
- swelling in your face, lips, tongue, throat or body
- difficulty in breathing
- chest pain
- itchy skin, a rash or skin redness.

Skin staining (brown discolouration) may occur due to leakage of iron into the tissues around the cannula site. This is not common but the stain can be **long-lasting** or **permanent.**

## You should tell your doctor or nurse immediately if you:

- **Feel unwell before, during or after the treatment.**
- **Experience any discomfort, burning, redness or swelling at the cannula site.**

## What happens after the infusion?

Unless you have an unexpected reaction, you will be able to drive home and do your normal activities. Before leaving ensure that you have:

- The number to contact if you have any worries or questions
- The dates for any follow up tests and / or appointments. If you feel unwell or have an infection when you are due to attend for an additional dose, phone the day unit to discuss if it is still suitable.

Sometimes side effects can start one to two days after the infusion. These will generally settle down without treatment over the next few days. If you are worried, or the side effects are interfering with your daily activities, please contact your GP for advice. If you have chest pain, difficulty breathing, dizziness or neck or mouth swelling CALL AN AMBULANCE (999).

## Who can I talk to if I have any questions?

If you have any questions regarding the information in this leaflet, or your treatment with an iron infusion, please discuss these with your doctor or nurse.

If you require this information in an accessible format, such as large print or braille or in a community language, please use the contact details on your patient information leaflet or letter.

إذا كنتم تحتاجون إلى هذه المعلومات في تنسيقٍ يسهل الاطلاع عليه، كأن تُطبع بأحرف كبيرة أو تُكتب بطريقة بريل أو تُترجم إلى إحدى اللغات المحلية، يُرجى استخدام بيانات الاتصال المذكورة في نشرة المعلومات المريض أو الخطاب المُرسل لكم.

如果您需要便于使用的信息版本，例如大号字体版本或盲文版或社区语言版本，请使用您的患者信息单或信函上的联系信息索取相应版本。

اگر این اطلاعات را در قالبی مناسب‌تر همچون چاپ درشت یا خط بریل یا زبانی خاص نیاز دارید، لطفاً با استفاده از اطلاعات تماس درج شده بر روی بروشور یا نامه بیمار خود، با ما تماس بگیرید.

Aby uzyskać te informacje w przystępnym formacie, np. w druku powiększonym, alfabecie Braille'a lub w języku wspólnoty, prosimy o kontakt pod adresem podanym w liście lub na ulotce informacyjnej dla pacjenta.

Dacă aveți nevoie de aceste informații într-un format accesibil, cum ar fi caractere mărite, scriere braille sau într-o limbă comunitară, vă rugăm să utilizați datele de contact din scrisoarea sau prospectul informativ pentru pacient.

اگر آپ کو یہ معلومات کسی قابل رسائی فارمیٹ، جیسے بڑے حروف یا بریل یا کسی کمیونٹی زبان میں درکار ہے، تو براہ کرم آپ اپنے مریض سے متعلق معلوماتی پرچے یا خط پر دی گئی رابطے کی تفصیلات استعمال کریں۔