

SAFETY ALERT

Risk of permanent skin staining due to extravasation of intravenous iron infusions

ISSUE

Parenteral iron may be indicated for the treatment of iron deficiency when oral iron preparations are ineffective, unsuitable or there is a clinical need to replenish iron stores rapidly.¹ Permanent skin staining can occur if there is extravasation (leakage of fluid) into the surrounding tissues.^{1,2,8} An increase in reports of iron staining in recent years has been attributed to increased use of intravenous (IV) iron.² While skin staining can occur with intramuscular or IV iron, this safety alert focuses on IV administration.

EVIDENCE OF HARM

Staining has been reported with various iron products, and one study cited an incidence of 1.3%.⁴ It is usually light to dark brown in colour but it can also be black, bluish, purple or grey.⁵ In many cases, staining is permanent⁸ and may have psychological implications for the patient if it is cosmetically unacceptable.⁵



Figure 1. Image of skin staining with intravenous iron infusion³
Reproduced from Haemosiderin pigmentation after intravenous iron infusion, Pérez-Pevida B, Kamocka A, BMJ 2018;360:k69 with permission from BMJ Publishing Group. Ltd.

HOW TO REDUCE THE RISKS^{2,5,6}

- 1. Ensure appropriate and prudent use of IV iron.**² Hospitals may wish to consider whether it is feasible and beneficial to develop order and administration proformas and / or to restrict stocking of IV iron products to certain areas.
- 2. Local hospital IV administration guidelines should highlight the risk of skin staining and provide guidance on risk minimisation measures, monitoring during administration and managing extravasation.**
- 3. Hospitals should consider implementing State Claims Agency advice to provide service users with comprehensive information to include the risks, benefits, and alternatives to IV iron infusion and obtain informed consent.**² Educate patients to keep their arm still and straight during the infusion and to alert their nurse immediately to signs of the drug 'leaking'² e.g. pain, swelling, and feelings of pressure or pricking at the infusion site. Early cessation of the infusion may reduce the amount of solution that enters the tissues and could lessen the extent of staining.⁵ Note: some patients report no pain or other symptoms during the infusion and the discolouration appears hours or days later.⁶
- 4. Avoid giving IV iron when fewer staff members are available to monitor the infusion.**² IV iron infusion is rarely urgent.²
- 5. Infusion site may influence extravasation risk due to potential for vessel damage related to cannula movement.**⁵
 - In the event of multiple attempts at cannulation, consider postponing the administration of IV iron.⁶
 - Sites of non-flexion are recommended e.g. distal veins of forearms. Avoid cannulation at sites of flexion.^{2,5,6}
- 6. Manage extravasation promptly and appropriately**^{5,6}
 - Stop the infusion immediately
 - Disconnect the giving set
 - Aspirate any residual drug from the cannula
 - Remove cannula
 - Apply a cold compress to treat swelling or soreness (not shown to prevent spread of stain)
 - Ideally, clinical photographs should be taken to record the extent and facilitate monitoring
 - Develop an appropriate follow up plan
 - Consider referral to Dermatology or Plastics- laser therapy may be a treatment option
 - Report in line with local reporting policies.

References:

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