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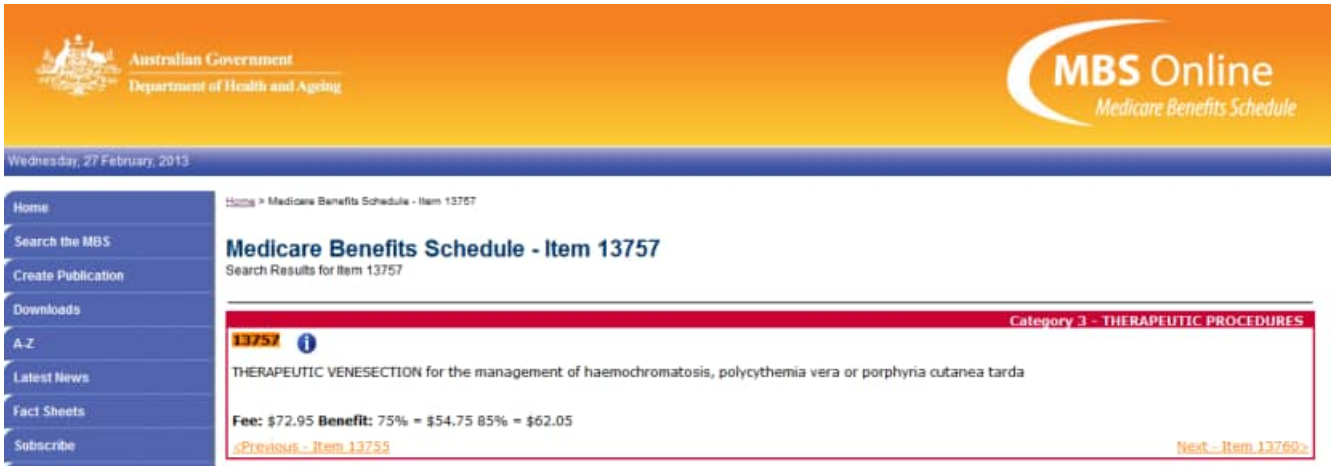
Venesections for Hereditary Haemochromatosis

Venesections attract a **Medicare Benefit** if performed for the management of **haemochromatosis**, polycythemia vera or porphyria cutanea tarda **(item 13757)**



Example Venesection Schedule for Hereditary Haemochromatosis

1. Iron unloading phase, target serum ferritin ~50µg/L

- weekly venesection of ~7mL/kg (maximum 550mL) whole blood
- ensure pre-venesection haemoglobin >120g/L
- monitor haemoglobin (Hb) and serum ferritin (SF)
  - **Hb**: is it safe to remove **more blood**? *delay for 1 week if pre-venesection Hb<120 g/L*
  - **SF**: is it safe to remove **more iron**? *monitor SF every 4-6 venesections, more often as SF approaches 100µg/L*
- it may take many months or even years to unload excess iron
- oral supplements for vitamin B12 (5µg daily) and folate (500µg daily) support erythropoiesis during frequent venesections

2. Lifelong maintenance phase, target serum ferritin ~50-100 µg/L

- venesections to maintain SF ~50-100 µg/L
- highly variable between individuals, often in the range 2-6 venesections per year
- check Hb before every venesection
- monitor SF periodically – at least every 12 months, maybe every 2-6 months, highly variable
- monitoring SF is the only way to ensure safe SF levels maintained – not too high, not too low

Venesection Procedure Prerequisites

- correct patient
- definite indication
  haemochromatosis (C282Y homozygosity or C282Y/H63D compound heterozygosity)
  or clinical iron overload supported by FerriScan® MRI or liver biopsy
  ie not for C282Y carrier with elevated serum ferritin and normal transferrin saturations
  (also appropriate for polycythaemia rubra vera and porphyria cutanea tarda)
- stable **haemoglobin >120g/L**
- serum **ferritin above 25µg/L, usually above 50µg/L**
- stable blood pressure systolic 110-160mmHg, diastolic 60-95mmHg
- stable pulse 50-100/minute
- ability to appropriately dispose of collected blood (clinical waste/biohazard)
- decent venous access – usually cubital fossa of the opposite side from the most recent venesection
- adequate pre-venesection hydration
- recent oral intake ie not fasting
- procedure has been explained
- consent has been obtained

Possible Complications

- haematoma
- hypovolaemia
- vasovagal syncope
- venous scarring
- phlebitis
- adverse reaction to lignocaine if used
- *if patient becomes tachycardic, hypotensive, restless or clammy, stop procedure and review patient*

How to perform venesection

Equipment

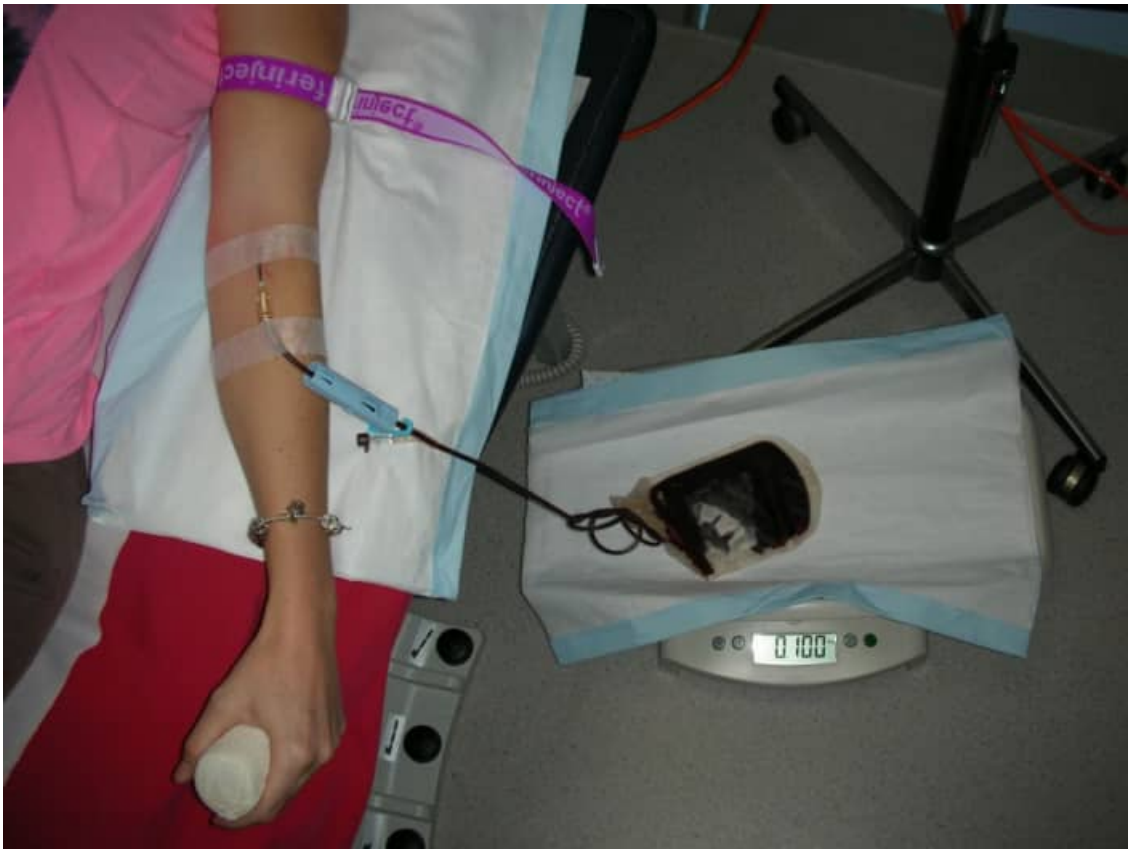
- blood pressure monitor
- gloves and goggles
- electronic scales to weigh bag

500mL blood weighs approx 600g

- blood donor bag with 18G needle attached, tubing loosely tied in 3 places *(see right)*
- needle guard if available *(pale blue plastic rectangle – see right)*
- tourniquet
- alco-wipes or chlorhexidine in alcohol 70%
- gauze squares
- cotton wool or gauze swab
- 3 strips of micropore tape
- stress ball or soft rolled bandage to squeeze
- if blood is collected from side-arm of blood donor bag for testing (haemoglobin and/or serum ferritin), will also need
  blood collection tubes
  pathology request form
  10mL syringe with sharp needle attached
  kidney dish to place everything in

Procedure

- position patient in a relaxed sitting or reclining position on an examination couch with arm extended
- record baseline observations – pulse, blood pressure and hydration status
- if patient is hypotensive or has signs and symptoms of dehydration delay venesection until resolved
- collect equipment and prepare trolley, including:
    - clipping on needle guard, if available
    - if blood is collected for testing, getting additional required equipment
    - washing hands
    - putting on gloves and goggles
- offer patient local anaesthetic, if desired/required – administer subcutaneously at 1 cm below intended venesection site
- place a plastic-backed absorbent sheet under elbow
- place a plastic-backed absorbent sheet on electronic scales below patient level
- apply tourniquet and locate a good vein
- prep site using alco-wipes or chlorhexidine in alcohol 70%
- insert needle of blood donor bag
- when correctly positioned in vein, secure with 2 strips of micropore tape – 1 over tubing and 1 over needle insertion site
- place blood donor bag onto scales



- release tourniquet slightly
- check frequently that blood flow into bag is continuing evenly and fairly slowly
- the venesection should take 10-20 minutes
- if necessary, instruct patient to gently squeeze a stress ball or soft rolled bandage in hand of arm undergoing venesection
- monitor patient's tolerance for procedure and assess for signs and symptoms of hypovolaemic shock
- release tourniquet or cuff when bag is at ordered weight, allowing for weight of bag
- make note of weight collected in patient's record
- if required, collect blood from sampling port to be sent for testing

- give the patient a folded gauze square to hold in their non-venesection hand
- remove needle from vein
- ask patient to apply pressure with folded gauze squares for a few minutes

- hold needle higher than bag to allow blood to drain from tubing into bag
- tighten knots in tubing
- if needle guard is available, pull needle into it to remove sharps risk
- if needle guard is not available, be careful
- cut off needle into sharps container
- discard blood bag according to local policies for blood products (may require incinerating or transport to local hospital or local pathology provider for disposal)
- apply cotton wool or gauze swab then final strip of micropore tape
- apply a firm bandage and instruct patient to remove bandage in approximately 2 hours
- instruct patient to remain lying/sitting down for 15 minutes
- advise patient not to perform heavy lifting with that arm and to avoid strenuous exercise for 24 hours
- offer the patient a drink and recommend they drink plenty of fluid over the next 24 hours

Resources and References

Northern Territory Government Venesection Protocol (2008). Endorsed by Remote Health Best Practice Group,. Written in consultation with Julie Domanski (Transfusion Nurse, Royal Darwin Hospital), Australian Red Cross Blood Service (Alice Springs & Darwin) and existing venesection Protocols from Peter MacCallum Cancer Centre, Bayside Health and Djerriwarrh Health Service. Available online at http://remotehealthatlas.nt.gov.au/venesection_protocol.pdf

Nicholson, Ann (2009). Hereditary haemochromatosis - diagnosis & management from a GP perspective. Irish College of General Practitioners Quality in Practice Committee. Available online at http://www.lenus.ie/hse/bitstream/10147/135427/1/QIP_Haemochromatosis.pdf

Appendix 2: Therapeutic Phlebotomy Using an 18 Gauge Cannula (2006). Iron Overload - Investigation and Management Summary Guidelines British Columbia Ministry of Health. Available online at http://www.bcguidelines.ca/guideline_iron_overload.html