Venesection Nursing Guidelines

Rationale

Patients requiring venesection on the Day Treatment Unit (DTU) fall into 3 main categories; patients diagnosed with:
- Polycythemia Rubra Vera
- Haemachromatosis
- Transfusion associated Iron overload

The reason for the venesection will determine the frequency of venesection and the blood tests which are required to verify the need for venesection. Patients referred to DTU for venesection by the Haematology medical team should have a specific plan of treatment documented in their medical notes, the blood parameters aimed for, and their subsequent outpatients follow-up.

Polycythemia Rubra Vera

Polycythemia Rubra Vera (PRV) is a condition in which patients have too many red blood cells; they have high haemoglobin and haematocrit which makes the blood thicker than normal and increases the risk of thrombotic events such as stroke, DVT and PE. Other presentation symptoms include tiredness, itching or headaches. Finally, a proportion of patients may have no symptoms and PRV may be picked up on a routine blood test.

Patients are venesected to lower haemoglobin and haematocrit levels and reduce risks of thrombotic events. Patients will be prescribed maximum (target) haematocrit; the aim is to keep them below this level. Initially patients may need venesection every week to bring the haematocrit down, the frequency will then reduce. Longer term individual management varies, ranging from monthly to every 3 or 4 months.

There are two main types of Polycythemia, primary and secondary.
- Primary Polycythemia is a genetic condition. Patients may be described as JAK2+ if they possess the JAK2 mutation. These patients will usually have a target haematocrit of >0.45.
- Secondary Polycythemia is usually caused by lifestyle factors such as drinking and smoking. These patients will usually have a target haematocrit of >0.50.
- Target haematocrit and frequency of venesection is documented in the medical notes. Most patients will also know this information.

When a patient comes for a venesection they should have had a blood test done within the last week or so to see if they have gone over their target haematocrit. If they have not had a blood test done they will need a pochi on the day to check the Hb and haematocrit. If they are below their target the venesection will be postponed.
Haemachromatosis

Haemachromatosis is a condition in which the body absorbs too much iron from the diet as the body is then unable to eliminate the iron. Patients have elevated blood ferritin levels, and if the ferritin continues to rise this will cause the build-up of iron around organs, particularly the heart and liver, which may lead to organ damage.

When a patient is first diagnosed with Haemachromatosis they will have venesections every few weeks to bring the ferritin levels down. They will then go onto a maintenance venesection programme, often every 3-4 months. Once the ferritin has come down to within normal limits the patient will be set a programme of venesections to carry on with indefinitely and a target ferritin, often to keep ferritin below 50. The patient’s ferritin levels will not be checked every time as checking too frequently can give misleading results due to fluctuations in ferritin reading. However, the patient should have a haemoglobin check prior to their venesection to check their haemoglobin is not too low. Venesection should not be done if the haemoglobin is less than 120g/l. If the haemoglobin is less than 120g/l, seek medical advice before proceeding. It may be recommended that the patient is venesected a smaller volume, or to return at a later date. If the patient has not had a FBC done since their last venesection, a pochi can be done on the day.

Transfusion Related Iron Overload

Patients who have had multiple blood transfusions during chemotherapy treatment may become iron overloaded as a result, as the body is unable to eliminate the iron which has accumulated. This group of patients has often undergone a bone marrow transplant. Post transplant the ferritin may be well over 1000ng/ml. Venesection is needed to bring the ferritin back to normal limits and reduce the risk of long term complications of iron overload. Patients will usually have venesections every two months until their ferritin is back within normal limits, which may take up to 2 years. As with haemachromatosis, the ferritin level is not checked every time, it may be checked every few venesection visits. Patients should have had a haemoglobin check prior to venesection. A blood test a few weeks old is ok as long as it has been done since the patient’s last venesection, and provided the patient has not been unwell. Venesection should not usually be done if the Hb is less than 120g/l. However, some patients’s Hb may be less than 120g/l if their blood counts have not returned to within the normal range post transplant. In this case it should be documented in the medical notes that the patient can proceed with venesections.

Venesection

Contraindications of venesection

Venesection should not be carried out, and should be rescheduled if:

- Patient feels unwell on the day of the appointment.
- Patient’s blood levels are below their prescribed target for haematocrit or ferritin.

Potential complications and side effects of venesection:
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- Fainting or feeling faint during or after the procedure.
- Bleeding or bruising post procedure – immediate or delayed.
- Patient may become anaemic as a result of venesection.
- Difficulty accessing suitable vein.

**Venesection Procedure**

**Equipment List**
- Venesection bag (integrated blood collection system comprising needle, collection bag, and sampling port)
- Sani-cloth
- Tourniquet
- Gauze
- Blue tray
- Gloves and apron
- Silver trolley
- Scales
- ‘Stress reliever’ (to squeeze during procedure)
- Mepore tape

**Procedure**
- Identify the patient as per Trust policy. Ensure he/she is fully informed of the reasons for venesection and potential complications. Obtain verbal consent to proceed.
- Assess patient:
  - Check patient is feeling well and has had something to eat and drink recently.
  - Check indication for venesection in patient’s medical notes.
  - Check blood results and ensure they meet parameters required for venesection.
  - Ask the patient how he/she felt when previously venesected.
  - Record blood pressure prior to first venesection or if patient has previously had problems with feeling faint, to ensure patient is not hypotensive.
- The patient must be on a bed for venesection in case of fainting or feeling unwell.
- **Never leave the patient during the procedure.**
- Assess the antecubital fossa veins. Support arm with a pillow and apply tourniquet.
- Place scales on bottom of silver trolley.
- Using ANTT clean skin with sani-cloth and allow to dry. Insert needle. Needle may need secured with tape once in position.
- Place venesection bag onto scales, keeping the bag below the level of the antecubital fossa.
- Observe blood flowing into the bag, controlling the rate of flow with the tourniquet or by asking the patient to gently clench and unclench their fist. Aim for a blood flow rate of about 1 ml/sec.
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- If you wish to take a blood sample, allow a small amount of blood to flow into the attached blood collection pouch by closing the clamp to the main bag, opening the clamp to the blood collection port and breaking the seal at the top of the pouch. Insert the pouch and insert blood bottle into integral vacutainer.
- Once 450ml has been obtained, release the tourniquet and clamp the tubing.
- Remove the needle and apply firm pressure on the puncture site with the disposable tourniquet for about 10 minutes. Do not bend the arm to do this.
- Ensure the patient remains on the bed for 15 minutes post venesection. Offer patient something to eat and drink. If the patients feels faint or dizzy lie them flat and check their blood pressure.
- Make next venesection appointment - most patients will know when they need to come back.
- Give patient blood card if needed.
- Remove tourniquet and apply plaster.
- Document venesection in medical notes, noting location of needle, volume of blood venesected, and any problems encountered.

Discharge advice:
- What to do if site bleeds
- What to do if feeling faint
- When to have next blood test

Tips & Hints

- Generally all patients are venesected 450mls. Exceptions include very slight patients who can only tolerate half a bag. Any deviations to volume to be venesected should be recorded in the patient’s medical notes.
- On first venesection the blood may be very thick and blood flow very slow. Venesection may take 30 minutes or more and it may not be possible to obtain full volume.
- Poor blood flow may be due to position of needle.
- Repeated venesections will cause scarring of the veins and thus difficulty accessing the vein. Try to rotate vein usage. Ensure location of venesection needle is documented at each appointment.
- If patients do not have suitable veins for venesection using the integral bag system, it may be necessary to use a cannula a syringe to draw off the blood. Try to insert a 20 gauge (pink) cannula. A large bore cannula may also enable the venesection of patients with very thick blood, as the cannula can be regularly flushed to maintain patency.
- Patients may become faint during or after the procedure. Encourage good oral fluid intake and adequate time to recover.
- Some patients may require IV saline infusion at the same time as their venesection if they have problems with blood pressure dropping after venesection. This is called isovolemic venesection. Only a few patients require this, and it should be recored in their notes if it is needed.
- Patients who are needle phobic may require topical local anaesthetic cream to be applied 20-30 minutes before the procedure.
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- The puncture site may start to bleed once the patient has left the department. Alert patient to this possibility and advise them to apply pressure and return to the department if it does not stop quickly.
- If you are unsure whether to go ahead with a venesection check with the Haematology Registrar.
- The Myeloid Advanced Nurse Practitioner undertakes follow-up for most patients who are undergoing venesection for PRV. She is available for advice Monday-Friday.
- If, on a Saturday, you are unsure when to book the next appointment, this can be arranged the next week by the haematology co-ordinator.

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