pathlab



September 2021

MEDICAL VENESECTION – Iron Overload / Polycythaemia

Pathlab Waikato previously operated a Venesection service under the direction and control of the referring clinician, with oversight by our service.

During the COVID lockdown period, and at the direction of the National Haematologist advisory group, medical venesection for iron overload was restricted to those patients with ferritin >1000 µg/L. Implementation of this direction required an audit of this service:

Audit summary:

- Significant proportion of patients had no record of Haemochromatosis genetic analysis*
- In comparison to other local regions, Waikato had a significantly different profile of:
  - Iron overload/Haemochromatosis patients – with many moderate, low or unknown risk factors.
  - Polycythaemia patients on venesection – many secondary polycythaemia patients

*Essential tool to direct/support treatment – See HealthPathways indications

Outcomes of audit:

Working with the Waikato Clinical governance group and HealthPathways, the medical venesection guidelines for iron overload and polycythaemia have been reviewed, updated and republished – see HealthPathways Therapeutic Venesection (Jan 2021), with links to relevant referral forms (also found on Pathlab website).

Reconfigured Venesection service:

We have implemented the venesection pathway as outlined on the HealthPathways website, with the new Pathlab referral forms assisting clinicians to ensure appropriate referral of patients to our service.

The therapeutic venesection service provided by Pathlab will from now require:

- Venesection referral form to be submitted prior to initiation of venesection process
- All venesection referral forms to be authorised by a Pathlab Haematologist**
- ONLY authorised venesections will be performed
- Initial appointment & frequency between venesections will be advised by Pathlab, based upon HealthPathways guidelines.

Note: Old style venesection and standard lab forms will not be accepted in the future.
If received, we will only perform one venesection and future venesections will not be actioned with these forms.

If you have any comments or queries, please contact:

Dr Gustavo Faulhaber, Consultant Haematologist
Gustavo.Faulhaber@pathlab.co.nz

**20%+ of current venesection referrals are declined, as they do not meet guidelines

CLINICAL UPDATE

FREQUENTLY ASKED QUESTIONS

Is hyperferritinaemia an indication for venesections?
Ferritin is a protein produced by the liver and may be elevated in numerous conditions. Most patients with elevated ferritin do not have iron overload. Recurrent venesections may be harmful to the patient. Inappropriate venesection can cause anaemia and iron deficiency, even with an elevated ferritin.

If a patient has increased ferritin and does not have Homozygous C282Y or Compound Heterozygous C282Y/H63D HFE gene mutations, what is the likely cause for elevated ferritin?
The most common causes for increased ferritin are: Metabolic syndrome with fatty liver disease, increased alcohol intake, inflammatory conditions, and hepatitis. These conditions do not benefit from venesections and are the most common reasons for a declined venesection.

Do all Compound Heterozygous C282Y/H63D patients need venesections?
No, most patients with this genotype do not develop iron overload. They should start venesections if no other obvious cause for hyperferritinaemia is found and if they have a ferritin higher than 1000 µg/L. If their ferritin is below this level, venesections can be safely discontinued, and ferritin levels should be monitored yearly.

If a patient has increased ferritin and is only heterozygous for the C282Y mutation, or is Homo/Hetero H63D, what should I do?
These genotypes alone are not linked to iron overload. The patient needs to be investigated as for any other patient with an increased ferritin. Venesections are only indicated if there is a ferritin higher than 1000 µg/L and proof of iron overload on MRI or liver biopsy.

In patients with an established diagnosis of haemochromatosis and iron overload, is it necessary to keep lifetime venesections?
Iron overload usually takes 20-40 years to develop. Patients older than 80 often don't tolerate venesections well due to hypovolaemia, hypotension, and other co-morbidities. If they have already achieved good ferritin control, they can safely stop venesections and be monitored yearly. They are unlikely to need venesections in the future.

Is increased haemoglobin an indication for venesection?
Patients with primary polycythaemia with a JAK2 mutation have a reduced risk of cardiovascular mortality and thrombosis with a venesection program (with or without cytoreductive therapy) aiming at a haematocrit target below 0.45.
Some patients with chronic hypoxic pulmonary disease may benefit from venesections aiming a haematocrit below 0.52, which reduces blood viscosity and may improve symptoms in selected cases.

Post renal transplantation polycythaemia is also an uncommon indication for venesection.
There is no established evidence supporting venesections for other causes of secondary polycythaemia. Venesections usually fail to control polycythaemia related to testosterone therapy, and patients usually develop iron deficiency, worsening symptoms. Management for this condition involves testosterone dose reduction, alternative dosing schedule or different administration routes.