MANAGEMENT OF PATIENTS WITH A HIGH INR CLINICAL GUIDELINE

RATIONALE

- Patients with a high INR are a priority - they must be managed on the day of the result.
- Management depends on assessing each patient for bleeding, the height of the INR and the presence of additional risk factors for bleeding.
- Always try to find out why the INR is high.
  - Is there new medication/change in medication, e.g. antibiotic, Amiodarone?
  - Is there intercurrent illness, e.g. fever, the onset of jaundice, or deteriorating renal function?
  - Is there excessive alcohol consumption?

THE MANAGEMENT OF A HIGH INR

The majority of INRs less than 8.0 in non-bleeding patients can be corrected as outpatients using oral or iv vitamin K, or just by stopping Warfarin. 1-2mg of oral/ IV Vitamin K will bring a moderately raised INR to within therapeutic range in less than 24 hours.

In cases of life threatening bleeding anticoagulant therapy should always be reversed using prothrombin complex concentrate (Octaplex**).

<table>
<thead>
<tr>
<th>Increased risk of haemorrhage</th>
<th>INR &lt;5.0</th>
<th>INR 5.0-8.0</th>
<th>INR &gt; 8.0</th>
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<tr>
<td>Omit Warfarin for 1-2 days. Recheck INR. Re-dose.</td>
<td>Omit Warfarin. Consider reversal with 1-2 mg oral or iv Vitamin K particularly if there are additional risk factors for bleeding.</td>
<td>Omit warfarin. Give 1-2 mg oral or iv vitamin K. If significant bleeding use prothrombin complex concentrate (Octaplex) or FFP if contraindicated.</td>
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** Octaplex available from the Transfusion Laboratory after discussion with haematology doctor.

Caution: Severe bleeding can occur with an INR in therapeutic range. Risk factors would include previous bleeding, age >70, a post op patient.
Notes

1. All patients who present with bleeding and a high INR should have their target range for Warfarin, and their need for Warfarin, reviewed.

2. Any patient who is bleeding whilst taking Warfarin therapy (irrespective of their INR) should be admitted to hospital. Patients with severe bleeding (e.g. subdural haematoma, or GI bleeding) should have their Warfarin reversed and the anticoagulant plan revisited.

3. For advice on patients, please ring the Consultant Haematologist on call, or the Consultant Physician on call.

4. For oral administration use IV adult formulation (Konnakion MM 10mg/ml) or IV/oral paediatric formulation (Konnakion Paediatric MM 2mg/0.2ml) and give via oral syringe provided or insulin syringe.

5. For intravenous administration, add required volume of vitamin K to 100ml glucose 5% and give over 20 minutes (preferred method). Alternatively, dilute 10mg to 10ml with glucose 5% (giving a 10mg/10ml solution), and discard 8-9ml depending on required dose. Give remaining volume by slow IV injection over 3 minutes.

REFERENCES

Guidelines for anticoagulation with warfarin – fourth edition. BCSH 2011 (Interim guidelines 160104)
Guidelines for the use of Fresh Frozen Plasma, Cryoprecipitate and Cryosupernata