

Algorithm for Management of Bleeding and Excessive Anticoagulation on Warfarin

Any bleeding in a patient on warfarin should be taken seriously.
If INR is not elevated then bleeding may be due to other factors and warfarin reversal may not be appropriate. Consider an underlying pathological cause.
If in doubt discuss with a senior doctor or Haematologist.

Investigate the reason for the high INR.
Drug interactions are most common.

BLEEDING

NO BLEEDING

Major bleeding*

Non major bleeding

INR 5-8

INR >8

Four-factor prothrombin complex concentrate (PCC) 25-50u/kg (Beriplex)

Round to nearest 500 units, maximum 5000 units

Plus 5mg IV Vitamin K

Recheck coagulation 15 minutes after Beriplex

If inadequate correction, consider other factors such as DIC, liver disease or inadequate Beriplex dose

If adequate correction repeat testing at 4-6 hours

1-3mg IV Vitamin K

Recheck INR daily until stable, or at 6 hours if bleeding continues

Intravenous vitamin K produces a more rapid correction of the INR than oral Vitamin K and should be used in preference in the bleeding patient

***Limb or life threatening bleeding, or other active bleeding with haemodynamic compromise (BP <90 mmHg systolic, oliguria, >2g/dL haemoglobin drop)**

Omit warfarin until INR <5 and reduce maintenance dose

Consider 1mg vitamin K PO if high bleeding risk e.g. age > 70 years, uncontrolled hypertension, liver disease, renal impairment, previous bleeding, recent surgery, anti-platelet drugs or thrombocytopenia

Recheck INR daily until stable

1-5mg PO Vitamin K

Recheck INR daily until stable

Give extra consideration before administering vitamin K in patients with metallic heart valves.

In patients with rapid onset neurological signs while on warfarin perform an URGENT INR and CT scan (within 1 hours).

Consider urgent reversal with Beriplex while these results are awaited if high suspicion of intracranial bleeding.

For surgery that requires reversal of warfarin and that can be delayed by 6-12 hours, the INR can be corrected by giving intravenous Vitamin K.

For surgery that requires reversal of warfarin and which cannot be delayed, the INR can be corrected by giving PCC and intravenous vitamin K.

Prothrombin complex concentrate (PCC) may induce a prothrombotic state. Use with caution in patients with DIC or decompensated liver disease