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.

**Algorithm for Management of Bleeding and Excessive Anticoagulation on Warfarin**

- **Major bleeding***
  - 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

- **Non major bleeding**
  - **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

- **INR 5-8**
  - 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

- **INR >8**
  - **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.

Reference: British Committee for Standards in Haematology (BCSH)