Gloucestershire Hospitals NHS
NHS Foundation Trust

Guidance on converting between anticoagulants

From \ To	**Warfarin** For initial warfarin dosing refer to Warfarin Initiation Protocol	**LMWH**	**Rivaroxaban** **(Formulary 1st choice NOAC)**	**Apixaban**	**Dabigatran**
Warfarin For the management of warfarin during invasive procedures refer to the warfarin 'bridging' protocol.	**For further advice on converting between anticoagulants contact Medicines Information (CGH 3030 GRH 6108)** ***In patients with renal impairment, higher than therapeutic plasma concentrations are expected and a longer interval may be required, contact Medicines Information for further advice.**	**Treatment of DVT/PE**; stop warfarin and initiate treatment dose LMWH when INR <2.0. **Prevention of stroke and systemic embolism**; review thrombotic risk on a case-by-case basis and consider initiating prophylactic or treatment dose LMWH once INR <2.0.	**DVT, PE and prevention of recurrence**; stop warfarin and initiate rivaroxaban once INR is ≤2.5. **Prevention of stroke and systemic embolism**; stop warfarin and initiate rivaroxaban once INR ≤3.0.	Discontinue warfarin and commence apixaban as soon as INR is <2.0.	Discontinue warfarin and commence dabigatran as soon as INR is <2.0.
LMWH	Commence warfarin in combination with LMWH, and monitor INR. Discontinue LMWH once INR in therapeutic range for 2 consecutive days.		Discontinue LMWH and commence rivaroxaban 0-2 hours before the time that the next scheduled dose of LMWH would be due.	Discontinue LMWH and commence apixaban at the time that the next scheduled dose of LMWH would be due.	Discontinue LMWH and commence dabigatran 0-2 hours before the time that the next scheduled dose of LMWH would be due.
Rivaroxaban For advice during invasive procedures, refer to Newer anticoagulants and elective procedures guideline.	Commence warfarin in combination with rivaroxaban. Rivaroxaban should be discontinued when INR is in therapeutic range. Measure INR prior to each dose of rivaroxaban being administered.	Discontinue rivaroxaban and commence LMWH at the time that the next scheduled dose of rivaroxaban would be due.		Discontinue rivaroxaban and commence apixaban at the time that the next scheduled dose of rivaroxaban would be due*.	Discontinue rivaroxaban and commence dabigatran at the time that the next scheduled dose of rivaroxaban would be due*.
Apixaban For advice during invasive procedures, refer to Newer anticoagulants and elective procedures guideline.	Commence warfarin in combination with apixaban. Apixaban should be continued for 2 days, after which point INR should be measured prior to each dose of apixaban. Apixaban should be discontinued when INR is ≥ 2.0.	Discontinue apixaban and commence LMWH at the time that the next scheduled dose of apixaban would be due.	Discontinue apixaban and commence rivaroxaban at the time that the next scheduled dose of apixaban would be due*.		Discontinue apixaban and commence dabigatran at the time that the next scheduled dose of apixaban would be due*.
Dabigatran For advice during invasive procedures, refer to Newer anticoagulants and elective procedures guideline.	**Conversion protocol depends on renal function.** For **CrCl ≥ 50ml/minute**, commence warfarin 3 days prior to discontinuing dabigatran. For **CrCl 30-50ml/minute**, commence warfarin 2 days prior to discontinuing dabigatran. <u>NB: dabigatran can increase INR. INR measurements should be interpreted cautiously until dabigatran has been stopped for 2 days.</u>	Discontinue dabigatran and commence LMWH 12-hours after the last dose of dabigatran was administered.	Discontinue dabigatran and commence rivaroxaban at the time that the next scheduled dose of dabigatran would be due*.	Discontinue dabigatran and commence apixaban at the time that the next scheduled dose of dabigatran would be due*.	

References

1. Summary of Product Characteristics for Xarelto 20mg film-coated tablets**.** electronic Medicines Compendium. Date of revision of the text: 15/08/2014 http://emc.medicines.org.uk/
2. Summary of Product Characteristics for Eliquis 5mg film-coated tablets**.** electronic Medicines Compendium. Date of revision of the text: 30/07/2014 http://emc.medicines.org.uk/
3. Summary of Product Characteristics for Pradaxa 150mg hard capsules**.** electronic Medicines Compendium. Date of revision of the text: 05/11/2014 http://emc.medicines.org.uk/
4. National Institute for Health and Care Excellence (NICE). CG 144. Venous thromboembolic diseases: the management of venous thromboembolic diseases and the role of thrombophilia testing. London: National Clinical Guideline Centre. JUNE 2014. [Accessed on: 01 DEC 2014]. Available from: http://www.nice.org.uk
5. Heidbuchel H, Verhamme P, Alings M et al. European Heart Rhythm Association Practical Guide on the use of new oral anticoagulants in patients with non-valvular atrial fibrillation. *Europace* (2013) 15; 625-651. http://europace.oxfordjournals.org/content/europace/15/5/625.full.pdf

Links

For the management of patients on warfarin prior to surgical procedures please refer to **Warfarin 'bridging' Protocol: Management of Warfarin During Elective Procedures**.
http://www.gloshospitals.nhs.uk/SharePoint1/Treatment%20Guidelines/Perioperative%20Warfarin%20Bridging%20Protocol.pdf

For the management of patients on NOACs (New Oral Anticoagulants) prior to surgical procedures please refer to **NOAC 'bridging' Protocol: Newer Anticoagulants and Elective Procedures**. http://www.gloshospitals.nhs.uk/SharePoint1/Treatment%20Guidelines/NOACs%20and%20elective%20surgery.pdf

For dosing instruction when initiating patients on warfarin please refer to **Warfarin Initiation Protocol Action Card**.
http://www.gloshospitals.nhs.uk/SharePoint1/Action%20Cards/A2095%20WAR1.pdf

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