Guy's and St Thomas' NHS Foundation Trust

Clinical Guideline

Peri-operative Surgical Bridging Protocol for patients receiving Direct Oral Anticoagulants (DOACs)

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Relevant external law, regulation, standards	

Change History		
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Refer here if DOAC reversal indicated for emergency surgery or procedure

How to contact the Thrombosis StR: During routine hours - bleep 0122; Out of hours and at weekends - bleep 0294

Indication for DOAC - either prevention of stroke in non-valvular AF, VTE treatment or secondary prevention, CAD or PAD?

NO → Discuss with Thrombosis StR any patient who has had a VTE or stroke within the past 6 weeks OR takes a DOAC for an indication other than AF, VTE, CAD or PAD

YES ↓

If DOAC for VTE, did it occur more than 6 weeks ago

NO → Discuss with Thrombosis StR any patient who has had a VTE or stroke within the past 6 weeks OR takes a DOAC for an indication other than AF, VTE, CAD or PAD

YES ↓

Pre-operative: What is the procedure's expected bleeding risk?

Minor bleeding risk: e.g. ophthalmological & dental procedures

- Determine renal function: Use the Cockcroft-Gault equation to calculate creatinine clearance

Timing of last DOAC dose pre procedure:			
Renal function (as calculated CrCl)	**Dabigatran (minimum)**	**Rivaroxaban / edoxaban (minimum)**	**Apixaban (minimum)**
CrCl >80ml/min	24 hours	24 hours	24 hours
CrCl 50-80 ml/min	36 hours	24 hours	24 hours
CrCl 30-49 ml/min	48 hours	36 hours	36 hours
CrCl 15-29 ml/min	**Contraindicated**	36 hours	36 hours
CrCl < 15ml/min		**Contraindicated**	**Contact thrombosis StR**

Major bleeding risk: e.g. cardiac, chest or abdominal surgery

- Determine renal function: Use the Cockcroft-Gault equation to calculate creatinine clearance

Timing of last DOAC dose pre procedure:			
Renal function (as calculated CrCl)	**Dabigatran (minimum)**	**Rivaroxaban /edoxaban (minimum)**	**Apixaban (minimum)**
CrCl >80ml/min	48 hours	48 hours	48 hours
CrCl 50-80 ml/min	72 hours	48 hours	48 hours
CrCl 30-49 ml/min	96 hours	48 hours	48 hours
CrCl 15-29 ml/min	**Contraindicated**	72 hours	72 hours
CrCl < 15ml/min		**Contraindicated**	**Contact thrombosis StR**

Post-operatively: Assess patient's bleeding risk and risk of VTE.
Following epidural catheter insertion and removal, and spinal anaesthesia - refer here for timing of next dose of anticoagulation

Haemostasis achieved, no further surgery planned and epidural catheter removed:

Day 0: Restart pre-admission dose 6-8 hours post-wound closure
(Adjust dose as per SPC if renal function has altered and refer to anticoagulation clinic via EPR)

Ongoing major bleeding risk postoperatively:

Day of procedure:

- Bridge with prophylactic dalteparin. Give first dose 6-12 hours post wound closure, if haemostasis achieved.

Weight	Prophylactic dose if calculated CrCL 30ml/minute or more	Prophylactic dose if calculated CrCLless than 30ml/minute
≤49 kg	2500 units **ONCE** daily	2500 units **ONCE** daily
50-99 kg	5000 units **ONCE** daily	2500 units **ONCE** daily
100-139kg	7500 units **ONCE** daily	5000 units **ONCE** daily
140-179kg	5000 units **TWICE** daily	5000 units **ONCE** daily
≥180kg	**Contact thrombosis StR**	

- Once bleeding risk reduced, restart DOAC **12-24 hours after last dose of dalteparin (determined by dalteparin frequency and by surgeon)**
- If renal function has deteriorated, please review dose of DOAC
- Ensure patient has not been started on any drugs that could potentially interact with DOAC e.g. cytochrome P-450 3A4 inhibitors and P-glycoprotein inhibitors - contact ward pharmacist / resident pharmacist for advice.

Key:
CrCL- creatinine clearance
VTE - venous thromboembolism
AF – Atrial fibrillation
DOAC – direct oral anticoagulant
CAD – Coronary artery disease
PAD – Peripheral artery disease