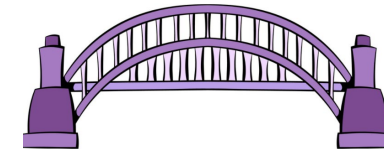




Preventing Anticoagulation Related Harm in the Neurosurgical Population

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Purpose

- Perioperative therapeutic anticoagulation management is fraught with risk, none more so than the neurosurgical population
- Lapses in communication have resulted in patient harm
- A *Therapeutic Anticoagulation Management Plan* (TAMP) was developed, implemented and audited
- The TAMP serves to guide appropriateness of perioperative bridging anticoagulation and provides structure to daily multidisciplinary clinical review of anticoagulation

Methods

- Created by Neurosurgical and Preadmission Pharmacists
- In consultation with perioperative medicine and neurosurgery

- The form is co-located with the medication chart
- Utilises validated tools to risk rate and guide bridging requirement

- Daily review by pharmacy and neurosurgical teams at the point of prescribing provides a detailed plan
- A documented cross-check ensures agreed plan is reflected on the chart

Results

The TAMP was piloted on the neurosurgical unit between 1/12/20 and 31/1/21;

- 241 patients were admitted during the trial period
- 18 patients identified on therapeutic anticoagulation
 - 16 patients had pre-existing anticoagulation, 2 had anticoagulation initiated due to pulmonary embolism
- All had a TAMP implemented
- Due to the nature of surgery, all patients were high bleeding risk.
- 6 patients were high thromboembolic risk; all received appropriate anticoagulation bridging pre- and post-surgery.

100% of post-neurosurgical plans correlated with inpatient medication charts

No low or medium risk thromboembolic risk patients were prescribed bridging

All patients were discharged with a clearly documented plan

Conclusion

- Implementation of the TAMP has ensured considered anticoagulation prescribing, thorough risk versus benefit analysis and appropriate translation of recommendations from theatre to the ward and on transition to the community
- Only patients at high thromboembolic risk received bridging in line with evidence that perioperative bridging provides no benefit in reducing thromboembolism risk but increases the risk of major bleeding up to 3-fold
- Pharmacist presence at the point of prescribing ensured consistent and timely review of anticoagulation orders
- It is planned to be rolled out across all RBWH surgical departments

THERAPEUTIC ANTICOAGULATION MANAGEMENT PLAN

Facility/Service: _____ Ward/Unit: _____ Year 20____

Attach ADR Sticker ☐ NKDA ☐ Unknown ☐ ☐ Print ☐ Date _____

Anticoagulation Indication:

☐ Atrial Fibrillation (CHA₂DS₂-VA = ____)

☐ Pulmonary Embolism (Date of PE = ____)

☐ Deep Vein Thrombosis (Date of DVT = ____)

☐ MECHANICAL Valve Replacement = Aortic ☐ Mitral ☐

☐ Thrombophilia: Factor V Leiden ☐ Antiphospholipid Syndrome ☐

☐ Lupus Anticoagulant ☐ Protein C Deficiency ☐

☐ Protein S Deficiency ☐

☐ Other Indication (Specify): _____

ASSESSMENT OF THROMBOTIC RISK: ☐ High ☐ Moderate ☐ Low

IS BRIDGING ANTICOAGULATION INDICATED BASED ON THROMBOTIC VERSUS BLEEDING RISK? (See decision support tools overleaf)

☐ Bridging is indicated ☐ Bridging is NOT indicated

If bridging, consultation with specialist managing anticoagulation has been sought:

Intensity of bridging:

☐ FULL THERAPEUTIC DOSE (Patient weight: ____/kg, Height: ____/cm, CrCl: ____/min)

☐ Prophylactic DOSE

☐ Heparin 5000 units BD or TDS

☐ Enoxaparin 40mg ONCE daily

☐ Unfractionated Heparin (per protocol)

☐ Collaborative dosing regimen as specified by treating consultant:

LAST DOSE OF BRIDGING ANTICOAGULATION: _____ or _____ hrs

ANTICOAGULANT ORDER ON NIMC: or IV HEPARIN CANCELLED PRE-OPERATIVELY:

POST-OPERATIVE PLAN (Date of Plan):

	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day
WITHHOLD all anticoagulation										
Chemical thromboprophylaxis only										
Treatment dose bridging anticoagulation										
Restart usual anticoagulation										
NIMC updated to reflect plan										
Registrar/Consultant Initial										
Pharmacist Initial & Date										