



Breast Biopsy on Therapeutic Anticoagulation

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Outline: Breast biopsy on therapeutic anticoagulation

1. Review of clinical practices in management of anticoagulation for breast biopsies at BreastScreen services in Australia
2. Overseas Radiology Society guidelines
3. Evidence based guidelines: Up to Date, Therapeutic Guidelines
4. Published studies
5. New BSSA guidelines 2017
6. Audit of new guidelines

BSSA – Anticoagulation Protocol

Medication	Recommendation
Single antiplatelet agent e.g. Aspirin or Clopidogrel	Continue
Dual antiplatelet agents e.g. Aspirin and Clopidogrel	Hold one agent for 7 days prior to biopsy
Warfarin	Withhold 5/7 prior, INR \leq 1.5 on day of biopsy (+/- cover with LMWH if high risk)
NOAC e.g. Apixaban, Rivaroxaban (factor Xa inhibitors) and Dabigatran (direct thrombin inhibitor)	Withhold for 48 hours prior to biopsy

Review of clinical practice

	Single antiplatelet	Dual antiplatelet	Warfarin	NOAC
BSSA (old protocol)	Continue	Cease one antiplatelet agent for 7/7 prior to biopsy	Withhold 5/7 prior, INR ≤ 1.5 on day of biopsy (+/- cover with LMWH if high risk)	Cease for 48 hrs prior to biopsy
NSW	Continue if aspirin only, stop Clopidogrel 3-5/7 prior	Withhold Clopidogrel 3-5/7 prior	Continue, INR < 3.0 (Core), < 2.5 (VACB)	Not mentioned
WA	Continue	Cease one agent	Continue if INR ≤ 1.7 (+/- cover with LMWH if high risk)	Not mentioned
Monash	Continue if aspirin only, stop Clopidogrel 10/7 prior	Cease Clopidogrel 10/7 prior	Withhold 5/7 prior, INR on day ≤ 1.5	Withhold for 5/7 prior (and withhold Dabigatran 24 hrs post bx)

Review of Clinical Practices – Overseas Radiology Societies

	Single antiplatelet	Dual antiplatelet	Warfarin	NOAC
British Society of Radiology (UK)	Continue	Continue	Continue if INR ≤ 4.0 (US Core), ≤ 2.5 (VACB)	Not mentioned
American College of Radiology (USA)	Continue	Continue	Continue	Continue
Society of Interventional Radiology (USA)	Continue	Withhold Clopidogrel for 0-2/7 prior	Proceed if INR < 2.5	Continue

Evidence based guidelines

Up To Date (2016) Perioperative Management of patients receiving anticoagulation:

- > Individuals undergoing selected surgery where there is a low risk of bleeding and the potential for local control measures further reduces concerns about risk, it may be preferable to continue their anticoagulant.
- > Continuing the anticoagulant likely reduces the risk of thromboembolism.
- > For those receiving Warfarin, it is important to confirm that the INR is not above the therapeutic range at the time of the procedure.

<https://www.uptodate.com/contents/perioperative-management-of-patients-receiving-anticoagulants>

Evidence based guidelines

Therapeutic Guidelines – recommendation for the peri-procedural management of antithrombotic therapy:

- > the potential harm of continuing a drug that may cause bleeding in its own right or increases the chance of bleeding from an intervention, should be balanced against that stopping the drug could cause fatal or incapacitating thromboembolic event.
- > In most cases ceasing an antithrombotic drug has greater potential harm than continuing it.
- > Any patient having an elective procedure with a low risk of bleeding should continue all regular antithrombotic drugs.

https://tgldcdp.tg.org.au/viewTopic?topicfile=periprocedural-management-cardiovascular-disease&guidelineName=Cardiovascular#toc_d1e88



Published papers

Melotti and Berg (2000)

- > Compared complication rates of breast biopsy in women with and without anticoagulation therapy.
- > Breast biopsy: 18 procedures on 15 women on anticoagulation: Warfarin 8, Heparin 1 & Aspirin 6 compared to 662 procedures in women not on anticoagulation
- > No clinically significant bleeding or haematoma formation (defined as hospital admission or surgical drainage).
- > Concluded that discontinuing anticoagulation medication before core biopsy may be unnecessary.

Melotti, MK and Berg, WA, 2000, Core Needle Breast Biopsy in Patients Undergoing Anticoagulation Therapy: Preliminary Results, American Journal of Roentgenology, 174, 245-249.

Published Studies – Somerville et al (2008)

- Retrospective study, 200 women on anticoagulants and control group 855 women not on anticoagulants. 180 women on aspirin, 4 combination product with aspirin/paracetamol/caffeine, 16 women on warfarin.
- Needle size varied from 14- to 9-gauge.
- Follow-up was in the form of a phone call (24-72 hours post- bx) regarding bruising and if a lump was present
- Increased bruising rates in women on anticoagulants but no statistical significant difference in haematoma formation or bruising with haematoma.
- Concluded safe to perform breast core biopsy on women taking aspirin or warfarin in therapeutic range.

Somerville, P, Seuifert, P, Destounis, S, Murphy, P and Young, W, 2008, Anticoagulation and Bleeding Risk After Core Needle Biopsy, American Journal of Roentgenology, 191; 1194-1197.

Published Studies – Chetlan et al, (2013)

- > Prospective assessment of core needle biopsies (stereotactic, U/S or MRI guided) compared haematoma formation after breast core needle biopsy for those taking antithrombotic medication.
- > Of the 617 core biopsies, 102 were on antithrombotic treatment: Aspirin 75, Aspirin+Clopidogrel 5, Clopidogrel 2, NSAID+Clopidogrel 5, Aspirin+Clopidogrel+NSAID 1, Warfarin 9, Warfarin +Aspirin 4
- > All stereotactic and MRI guided bx used 9-gauge needles, all US core bx used 14-gauge needles and vacuum assisted US core 12-gauge needles
- > Post-biopsy mammograms were taken to detect haematomas.
- > After biopsy all patients underwent follow-up within 24-48 hours with either a face to face consultation (60%) or telephone call (40%).

Chetlan, AL, Kasales, C, Mack, J, Schetter, and Zhu, J, 2013, Haematoma Formation During Breast Core Needle Biopsy in Women Taking Antithrombotic Therapy, American Journal of Roentgenology, 201, 215-222.

Published Studies – Chetlan et al, (2013)

- > Increased rates of non-clinically significant haematomas in women on anticoagulants (21.6%) vs those not (13%)
- > Haematoma rates were associated with larger needles: 9-gauge (29.5%) vs 12- & 14-gauge (3.6%)
- > No clinically significant bleeding or haematomas. A clinically significant haematoma was defined as requiring surgical intervention, hospital admission, short term clinical follow-up or drainage, severe post-procedural discomfort not responsive to paracetamol or delayed ultimate surgical treatment.
- > Concluded under most clinical circumstances it is safe to perform percutaneous breast core biopsy on women undergoing antithrombotic therapy.

Chetlan, AL, Kasales, C, Mack, J, Schetter, and Zhu, J, 2013, Haematoma Formation During Breast Core Needle Biopsy in Women Taking Antithrombotic Therapy, American Journal of Roentgenology, 201, 215-222.

New BSSA Guidelines - 2017

Agent	Recommendations for breast biopsy
Aspirin	Continue
Clopidogrel (with or without Aspirin) or dual antiplatelet agents	Continue
Warfarin	US Core if $INR \leq 3.0$, SVACB if $INR \leq 2.5$, FNA at any level. INR machine was purchased to check INR prior to procedure if on Warfarin.
NOAC (New oral anticoagulants)	Continue

Consider the type of intervention; location and available support should excessive bleeding occur; comfort level of staff and altering type of intervention / local anaesthetic used i.e. with adrenaline. The recommendations above are to help guide clinical decision making but the final decision to proceed with biopsy for a women on anticoagulation remains at the discretion of the assessment radiologist.

Audit of new guidelines

- > New guidelines were implemented April 2017
- > 29 women were biopsied (previously would have had anticoagulation withheld and rebooked)
 - 11 NOAC's (7 US Cores, 4 SVACB)
 - 6 on dual antiplatelet agents (all aspirin + Clopidogrel - 4 US Cores, 2 SVACB)
 - 11 on Warfarin (9 US Cores, 3 SVACB – with one woman having both)
 - 1 on warfarin + Clopidogrel (US Core)
- > **NO CLINICALLY SIGNIFICANT BLEEDING**
- > **NO NEGATIVE FEEDBACK FROM CLIENTS, RADIOLOGISTS OR SURGEONS**

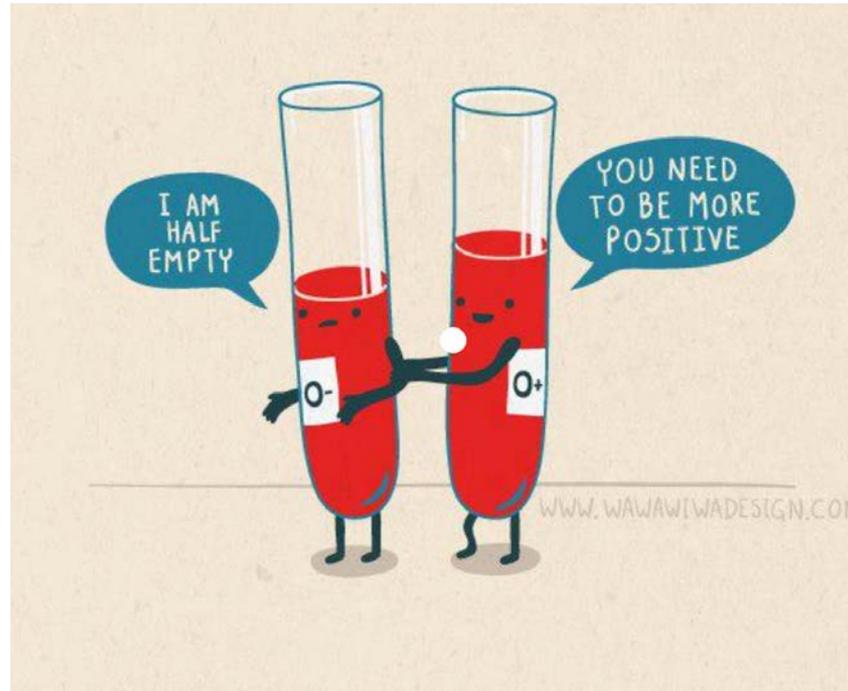


Benefits of new anticoagulation guidelines

- > Reduce risk of significant thrombotic complication of stopping anticoagulation (CVA, AMI, PE, death)
- > Reduce repeat visits to assessment clinic, thereby freeing up appointments for other clients
- > Reduce travel time and time off work for client
- > Timely diagnosis for client
- > Reduce stress of repeated visits for client
- > Reduced resources: BSSA medical officers liaising with GP's, Specialist's and clients regarding cessation, bridging anticoagulation and arranging repeat bloods and appointments

BSSA – Breast Biopsy on Therapeutic Anticoagulation

> Thank you



> Any questions?



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