**MONITORING WARFARIN**

Community HealthPathways Auckland Region | Te rohe o Tāmaki Makaurau – accessed 5th March 2023

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Arrange ongoing monitoring.

**Ongoing monitoring**

Monitor every 2 to 3 days until INR therapeutic and stable on 2 consecutive tests, then:

* every week until INR therapeutic and stable on 2 consecutive tests, then
* every two weeks until INR therapeutic and stable on 2 consecutive tests, then
* as required, every month as long as INR remains stable.

Keep INR within the target range.

**Target INR**

Use the table as a guide to individualise treatment. Target INR is tailored to individual circumstances. Seek relevant specialist advice if any uncertainty.

Review the benefits of anticoagulation against the risks of bleeding at least annually.

|  |  |
| --- | --- |
| Indication | Recommended target prothrombin ratio (INR) for warfarin treatment |
| Pre- and perioperative anticoagulation | 1.5 to 2.0 |
| Treatment of VTE:* Distal DVT
* Provoked or unprovoked DVT
* Massive DVT or pulmonary embolism
 | 2.0 to 3.0 |
| Treatment of recurrent DVT or pulmonary embolism, despite therapeutic INR | 3.0 to 4.0 |
| Atrial fibrillation | 2.0 to 3.0 |
| Mechanical valves: |   |
| * Aortic valve replacement
 | 2.5 (range 2.0 to 3.0)or as advised by specialist |
| * Aortic valve replacement with at least one of:
	+ atrial fibrillation
	+ previous, thromboembolism
	+ mitral stenosis
	+ LV ejection fraction less than 35%
 |    3.0 (range 2.5 to 3.5) or as advised by specialist |
| * Mitral valve replacement
 | 3.0 (range 2.5 to 3.5) or as advised by specialist |

Seek [cardiology advice](https://aucklandregion.communityhealthpathways.org/99996.htm) about bridging Clexane if the patient has a mechanical heart valve and INR is subtherapeutic.

Consider using the best practice – [Decision support INR monitoring module](http://www.bestpractice.net.nz/feat_mod_INR.php).

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If the patient is in atrial fibrillation, reassess the bleeding risk regularly (i.e., at least annually) using the HAS-BLED score

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If there is a significant change in INR levels, consider potential causes e.g.:

* compliance.
* drug interactions.
* major changes in diet or alcohol use.
* concurrent disease e.g., heart failure, liver failure, thyroid disease, vomiting and diarrhoea.
* [warfarin over-anticoagulation](https://aucklandregion.communityhealthpathways.org/30312.htm).

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Consider adjusting the dose of warfarin. In stable patients, avoid frequent dose adjustment e.g., more frequently than every 4 days.

**Dose adjustment**

Changes in warfarin dosage may take several days to affect INR. Therefore, frequent dosage adjustment (less than 4- to 5-day intervals) is not recommended.

Adjustments detailed in the table below may need to be modified according to:

* the presence of concurrent illness.
* the target INR.

For those patients who have their medications blister packed or are in rest homes, contact the pharmacy and rest home to discuss the best way to efficiently manage dose alterations.

|  |  |  |
| --- | --- | --- |
| INRTarget2.0 to 3.0 | INRTarget2.5 to 3.5 | Dose adjustment |
| Less than 1.5 | Less than 2 | Increase weekly dose by 20% and give one time top-up additional amount equal to 20% of weekly dose. |
| 1.6 to 1.9 | 2.0 to 2.4 | Increase weekly dose by 10%. |
| 2 to 3 | 2.5 to 3.5 | No change. |
| 3.1 to 3.5 | 3.6 to 4.0 | No change. Recheck in one week. If persistent, decrease weekly dose by 10 to 20%. |
| 3.6 to 5 | 4.1 to 5.0 | Omit 1 dose. Decrease weekly dose by 10 to 20% and recheck in 2 to 5 days. |
| Greater than 5 | Greater than 5 | See [Warfarin Over-anticoagulation or Bleeding](https://aucklandregion.communityhealthpathways.org/30312.htm). |

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1. If starting or stopping a medication, consider how it may affect INR.

**Starting or stopping medications**

If starting on a new medication, check INR 1 week after starting the new medication.

Stopping a medication which interacts with warfarin will also affect the INR.

Drugs with a long half-life (e.g. amiodarone) will need a longer period of more frequent monitoring.

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For point-of-care INR testing by community pharmacies, request [warfarin monitoring](https://aucklandregion.communityhealthpathways.org/191509.htm).

**Point-of-care INR testing**

Doses where INR is within a specified safe range are managed by the pharmacist under a standing order, otherwise the general practitioner is contacted.

If INR is greater than 4.0 using point-of-care testing (CoaguChek), the result should be confirmed on a laboratory venous sample as the accuracy of point-of-care testing devices is reduced at higher INR levels.

If not already in place, a standing order also needs to be signed by the general practice, naming the pharmacy.

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1. If the patient is planning to have:
	* major surgery, spinal or epidural anaesthesia, or clinical or minor procedure, see [Peri-procedural Management of Warfarin, NOACs, and Antiplatelets](https://aucklandregion.communityhealthpathways.org/40619.htm).
	* dental procedure (e.g., scaling, fillings, or minor oral surgery), see [Warfarin - Dental Extractions](https://aucklandregion.communityhealthpathways.org/27281.htm).