



# Monitoring guidance for a patient with atrial fibrillation

Learn how to monitor a patient with atrial fibrillation in a GP setting, using practical monitoring information through MedicinesComplete.

Evidence-based, actionable monitoring information to optimise drug treatment



**Drug Monitoring Checker**

Available through

 Medicines  
Complete



# Monitoring guidance for a patient with atrial fibrillation

Using essential knowledge at the point of care



Denise is a 60-year-old retired teacher who has been experiencing episodes of shortness of breath and heart palpitations over the past week. Denise goes to the emergency department and is diagnosed with atrial fibrillation. She is subsequently started on verapamil and warfarin by the medical team and is discharged with the GP to follow-up.

The GP would like to know what on-going monitoring is required for verapamil and refers to Drug Monitoring Checker through MedicinesComplete.

The screenshot shows the MedicinesComplete Drug Monitoring Checker interface. At the top, the search bar contains 'Verapamil hydrochloride'. Below the search bar, the results show 'You searched for: Verapamil Hydrochloride' with a link to 'Search for a different drug'. Underneath, a box titled 'Monitoring parameters (3)' lists three parameters: 'Blood pressure' (Oral), 'Heart rate' (Oral), and 'Liver blood tests' (Oral). At the bottom of the interface, there is a disclaimer: 'Some monitoring parameters have not been included where the evidence is lacking. This tool is not designed to replace clinical experience and decisions on monitoring should always be individualised to the patient. It may be necessary to monitor other parameters than those listed within the tool if considered to be clinically appropriate.'

Using the practical guidance available on Drug Monitoring Checker, the GP finds that regular monitoring of blood pressure, heart rate, and liver blood tests is required for Denise. Drug Monitoring Checker provides information on the recommended frequency of monitoring which the GP notes down in Denise's health record.



Guidance within **Drug Monitoring Checker** is easily accessible and provides healthcare professionals with evidence-based information to support quick decision-making at the point of care.

Denise was discharged with twice weekly INR blood testing. The GP needs to know when they can reduce the frequency of INR monitoring and searches for warfarin in Drug Monitoring Checker to quickly find out this information.

Medicines Complete

Verapamil hydrochloride

Drug Monitoring Checker

International normalized ratio Oral

**Target**

Target INR varies by indication, refer to local and national guidance.

Treatment of DVT or PE; atrial fibrillation; bioprosthetic valve = target INR of 2.5.

Recurrent DVT or PE in people currently receiving anticoagulation and with an INR >2 = target INR of 3.5.

Mechanical prosthetic heart valves = target INR is dependent on the type and location of the valve, and patient-related risk factors.

**Before starting treatment**

Yes

**Action**

If INR  $\geq 1.4$ , repeat INR and investigate cause. If still increased, review starting warfarin. [E]

**After starting treatment**

Every 1–2 days until the INR is within therapeutic range on two consecutive occasions.

Then every 3–4 days for 1–2 weeks.

Then every week until the INR is within therapeutic range on two consecutive occasions.

Then at least every 12 weeks depending on the stability of the INR.

Referring to the 'After starting treatment' section, the GP informs Denise that she needs to continue with twice weekly INR monitoring for a further week.

## 1 week later

Denise returns to see the GP who reduces the INR monitoring to once weekly as Denise's INR is on target. As shown in Drug Monitoring Checker, the target INR for atrial fibrillation is 2.5.

## 3 weeks later

Denise's INR result is 6. The GP phones Denise and requests that she come into the practice for a bleeding assessment.



Since Denise has no signs of bleeding, the GP consults the 'Action' section in Drug Monitoring Checker for advice.

**Medicines Complete**  
Verapamil hydrochloride

**Drug Monitoring Checker**

**Action**

If the INR is outside therapeutic range, consider changes in adherence, drugs, lifestyle (e.g. alcohol, smoking, food and drink intake), and general health. **[A]**

If the INR is:

- >8 with no or minor bleeding, stop warfarin and give phytomenadione. The dose of phytomenadione may be repeated after 24 hours if the INR is still too high. **[A]**
- 5-8 with minor bleeding, stop warfarin and give phytomenadione. **[A]**
- 5-8 with no bleeding, withhold 1 or 2 doses of warfarin and reduce subsequent maintenance dose. **[A]**

Restart warfarin when the INR is <5. **[A]**

If the INR is high, but <5:

- reduce dose and/or withhold 1 or 2 doses of warfarin. **[M]**
- remeasure INR 2 or 3 days later. **[M]**

Restart warfarin when the INR is <5. **[M]**

If the INR is lower than the target:

Using the actionable monitoring information, the GP decides to withhold warfarin for 2 doses and then re-measures the INR.

Denise's INR drops to 3.5, so the GP restarts warfarin at a reduced dose.

## 6 weeks later

Denise returns to the GP practice for her regular liver blood test monitoring for verapamil. The GP would like to know about the liver blood test cut-offs with verapamil.

The GP searches for 'verapamil' in Drug Monitoring Checker and finds this information in the action section of the liver blood tests parameter.



The screenshot shows the 'Medicines Complete' Drug Monitoring Checker interface. The search term 'Verapamil hydrochloride' is entered. The results are filtered for 'Oral' administration. The main content area is titled 'Liver blood tests' and includes the following information:

- Before starting treatment:** Yes.
- Action:** If hepatic impairment present, consider reducing verapamil dose [M] and consider more frequent monitoring. [E]
- After starting treatment:** Every 6–12 months.
- Special circumstances:** If baseline liver blood tests abnormal, consider more frequent monitoring. [E]
- Action:** If hepatic impairment present, consider reducing verapamil dose [M] and consider more frequent monitoring. [E]. If liver blood tests >3 x ULN, consider stopping or withholding treatment. [E]
- Rationale:** Verapamil is extensively metabolised by the liver.

Fortunately, Denise’s liver blood tests return within the normal reference ranges, so the GP reduces the ongoing liver blood test monitoring to every 12 months.

To learn more about the clinical patterns of liver blood tests and specific liver blood test reference ranges, the GP refers to the ‘Liver blood tests’ and ‘Alanine aminotransferase’ Parameter Profiles in Drug Monitoring Checker.

## Parameter Profile – Liver blood tests:

The screenshot shows the 'Medicines Complete' Drug Monitoring Checker interface for 'Liver blood tests'. The 'Interpretation' section is highlighted in the left-hand navigation menu. The main content area contains the following text:

**Interpretation**

Abnormal liver blood test results should only be interpreted after review of the previous results, past medical history, and current medical condition. It should also be borne in mind that the extent of liver blood test abnormality is not necessarily a guide to clinical significance.<sup>1</sup>

The most common abnormality seen with liver blood tests are increases in ALT and AST<sup>1</sup>

**Clinical patterns of liver blood tests**

**Isolated increased bilirubin pattern**  
Most commonly caused by Gilbert’s syndrome.<sup>1</sup>

**Cholestatic pattern**  
Predominantly increased ALP and GGT indicate cholestasis. Common causes include primary biliary cholangitis, primary sclerosing cholangitis, biliary obstruction (stones, strictures, neoplasia, etc.), hepatic congestion, and drug-induced liver injury.<sup>1</sup>



## Parameter Profile – Alanine aminotransferase:

Medicines Complete

Alanine aminotransferase

+ Drug Monitoring Checker

Subsections	Related Content
Synonyms	
Related Parameters	
Definition	
Purpose	
Reference range	
Interpretation	
Additional Information	
References	

### Reference range

Serum ALT 5–42 IU/L<sup>2</sup>

Reference ranges may differ by laboratory.

### Interpretation

Increased ALT occurs with liver injury. ALT is present in low levels in non-hepatic tissue, therefore non-liver related increases are uncommon.<sup>2</sup>

People with acute liver damage usually have a particularly high ALT, whilst those with chronic liver disease and obstructive jaundice have ALT levels which are more modestly raised.<sup>2</sup> ALT may be normal, or only marginally raised, in people with cirrhosis since there is little remaining healthy liver tissue.<sup>2</sup> Therefore, a normal ALT level may not exclude significant liver disease.<sup>1</sup>

Decreased ALT (and AST) can also suggest vitamin B6 deficiency.<sup>3</sup>

For further detail on the interpretation of liver blood tests as part of a clinical pattern, see Interpretation in Liver blood tests.

### Additional Information

Measurements of ALT are highly reproducible.<sup>1</sup>

ALT levels are higher in people of male sex than people of female sex.<sup>1</sup>

For a list of drugs that affect ALT, see [Martindale's ADR checker](#).

Further detailed information on monitoring parameters can be found in the **Parameter Profiles**. Each Parameter Profile is presented in a standardised format including information on definition, purpose, reference ranges, interpretation and requirements.

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6



## Drug Monitoring Checker

Authored in collaboration with external experts, Drug Monitoring Checker provides clear, concise, and actionable advice before, during and after treatment. An essential tool to help health professionals save time and make effective drug monitoring decisions at the point of care.

### Access this essential knowledge today

MedicinesComplete makes it easy for health professionals to access essential medicines information at the point of care. Providing trusted evidence-based knowledge for confident decision-making and effective patient care.



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