

GDL12

IV LABETALOL PRESCRIBING REGIMEN

1.0 Procedure Statement (Purpose / Objectives of the Procedure)

Labetalol is a non-selective beta-receptor antagonist, with some alpha₁ antagonist activity. It causes a reduction in blood pressure through reducing systemic vascular resistance, without impacting cardiac output or causing reflex tachycardia. Labetalol is an effective drug for the management of acute aortic dissection and hypertensive emergencies.

Aim

To assist with the prescribing, administration, and monitoring of intravenous labetalol. This guideline is intended for use in adult patients only.

2.0 Accountabilities

This is a trust-wide document but will be managed by the cardiology directorate and cardiothoracic directorate.

3.0 Procedure/Guidelines Detail / Actions

LABETALOL PRESENTATION

Ampoules containing Labetalol hydrochloride **100mg in 20mL**

Indication:

- Accelerated hypertension.
- Aortic dissection

Contraindications:

Asthma/ history of bronchospasm; cardiogenic shock; hypotension; marked bradycardia; metabolic acidosis; phaeochromocytoma (apart from specific use with alpha-blockers); Prinzmetal's angina; second-degree AV block; severe peripheral arterial disease; sick sinus syndrome; third-degree AV block; uncontrolled heart failure.

Dosing

IV bolus injection (via central line or large peripheral vein): Initially 50mg over at least 1 min. If necessary, repeat at 5-minute intervals until a satisfactory response occurs, **up to a maximum of 4 doses (200mg in total)** *The maximum effect usually occurs within 5 mins and the duration of action is usually about 6 hours but may be as long as 18 hours.*

IV infusion (via a syringe pump): Dilute to a concentration of 1mg/mL – commence at a rate of 0.5 mg/min by IV infusion, increasing according to response to a maximum rate of 2 mg/min. Continue infusion until a satisfactory response is achieved, then stop.

In most patients, the effective cumulative dose is usually 50–200 mg depending on initial blood pressure, but occasionally higher doses may be required. **Table 1 below gives the corresponding flow rate (mL/hour) for a range of doses.**

Table 1 – Labetalol IV (1mg/mL concentration) infusion flow rates

Dose (mg/min)	0.5	1	1.5	2
Flow rate (mL/hr)	30	60	90	120

Route of administration

For peripheral administration, dilute to 1mg/ml with **glucose 5%. Diluted solution is stable for 24 hours.**

For central administration, labetalol *may* be administered undiluted (5mg/mL). This is reserved for fluid restricted patients on critical care.

Diluents

Glucose 5% is the preferred diluent.

Labetalol hydrochloride is incompatible with sodium bicarbonate 4.2%.

Monitoring

- Ensure patient remains supine during and for 3 hours after end of administration to avoid excessive postural hypotension.
- Blood pressure, heart rate, ECG and respiratory function e.g., signs of bronchospasm.
- In most patients, there will be a small decrease in heart rate; severe bradycardia is unusual but can be controlled by giving atropine sulphate 600 microgram by IV injection, repeated, if necessary, at 5-min intervals. Total dose of atropine sulphate should not exceed 2.4 mg. Monitor for signs of bronchospasm, especially in patients with any known impairment in respiratory function.

4.0 Equipment Required

None

5.0 Training

This guideline will be available on the Trust intranet.

6.0 Financial Risk Assessment

1	Does the implementation of this document require any additional Capital resources	No
2	Does the implementation of this document require additional revenue resources	No
3	Does the implementation of this document require additional manpower	No
4	Does the implementation of this document release any manpower costs through a change in practice	No
5	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programs or allocated training times for staff.	No
	Other comments	

7.0 Equality Impact Assessment

Not applicable

8.0 Maintenance

The cardiology and cardiothoracic directorate will ensure the document is reviewed at least every 3 years.

9.0 Communication and Training

This information will be disseminated to all relevant departments.

10.0 Audit Process

Criterion	Lead	Monitoring method	Frequency	Evaluation
Compliance with guideline	Cardiology governance	Datix	As incidents happen	Cardiology governance

11.0 References - Legal, professional or national guidelines

- 1) Labetalol SPC <https://www.medicines.org.uk/emc/product/10831/smpc>
- 2) Labetalol overview – Science Direct [Labetalol - an overview | ScienceDirect Topics](#)
- 3) Medusa Injectable Medicines Guide <https://www.medusaimg.nhs.uk/IVGuideDisplay.asp>

Part A - Document Control

<p>Procedure/ Guidelines number and version</p> <p>GDL12</p> <p>Version 1.0</p>	<p>Title of Procedure/Guidelines – Labetalol IV prescribing regimen.</p>	<p>Status:</p> <p>Final</p>		<p>Author: Shamma Khan</p> <p>Contributor: Nazish Khan</p> <p>For Trust-wide Procedures and Guidelines Chief Officer Sponsor:</p> <p>Chief Medical Officer</p>
<p>Version / Amendment History</p>	<p>Version</p>	Date	Author	Reason
	<p>1 (Local document)</p>	2016	Nazish Khan	Update required/to comply with trust format
	<p>1.0</p>	Jan. 2024	Shamma Khan	Full review / Guideline implemented as Trust- wide document
<p>Intended Recipients: Nurses, doctors, allied health professionals</p>				
<p>Consultation Group / Role Titles and Date: Cardiology Governance</p>				
<p>Name and date of group where reviewed</p>		<p>Cardiology Governance 27/9/23 MMG 7/11/23 Trust Policy Group - 12/01/24</p>		
<p>Name and date of final approval committee(if trust-wide document)/ Directorate or other locally approved committee (if local document)</p>		<p>Trust Management Committee – 26.01.24</p>		
<p>Date of Procedure/Guidelines issue</p>		<p>January 2024</p>		
<p>Review Date and Frequency (standard review frequency is 3 yearly unless otherwise indicated – see section 3.8.1 of Attachment 1)</p>		<p>January 2027 Every 3 years</p>		

Training and Dissemination: email/will be available on intranet.	
Publishing Requirements: Can this document be published on the Trust's public page:	
Yes	
If yes you must ensure that you have read and have fully considered it meets the requirements outlined in sections 1.9, 3.7 and 3.9 of OP01, Governance of Trust-wide Strategy/Policy/Procedure/Guidelines and Local Procedure and Guidelines , as well as considering any redactions that will be required prior to publication.	
To be read in conjunction with: -	
Initial Equality Impact Assessment: Completed Yes Full EA: N/A If you require this document in an alternative format e.g., larger print please contact Policy Management Officer 85887 for Trust- wide documents or your line manager or Divisional Management office for Local documents.	
Contact for Review	Shamma Khan Senior Pharmacist – Cardiac Services shamma.khan@nhs.net
Monitoring arrangements	Datix.
Document summary/key issues covered: A guideline to assist with the prescribing, administration and monitoring of intravenous labetalol.	
Key words for intranet searching purposes	Labetalol