University Hospitals of Leicester NHS
NHS Trust

# Paediatric Cardiology

## Paediatric WARFARIN DOSING - Induction and maintenance

## Paediatric Cardiology Guideline

**(Guideline based on the one used by Hospital for Sick Children, Toronto)**

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|---|---|
| Staff relevant to: | Clinical staff working within Paediatric Cardiology |
| Approval date: | July 2024 |
| Version: | 5 |
| Revision due: | July 2027 |
| Written by: | S Shebani |
| Trust Ref: | C197/2016 |

### 1. Introduction and Who Guideline applies to:

It is important to recognise that there are 2 guidelines for Warfarin dosing:

1. One for cardiology with variable INR targets - this is managed by cardiology (cardiology registrar or cardiology consultant) – and any changes to warfarin dosing or need for reversal (or administration of vitamin K) must be discussed with cardiology (cardiology decides if there is further need for haematology input).
2. The second one for general paediatrics where the target of INR 2-3 is used; these patients are managed by Haematology

Since the half-lives of the vitamin K dependent coagulation factors vary from 6 to 72 hours and the half-life of warfarin is 2.5 days, changes made in the dosage will not be full reflected by the INR until day 3 or 4. Maintenance doses are highly dependent upon patient age, vitamin K intake, intercurrent illnesses and concurrent use of other drugs.

This guideline is for use by the clinical staff working within Paediatric Cardiology.

### 2. Guideline Standards and Procedures:

- Obtain a baseline coagulation screen and LFTs. If child is being anticoagulated for a definite thromboembolic event discuss with consultant haematologists before initiating any anticoagulant therapy (to ensure adequate blood samples have been obtained for thrombophilia screen)

- The loading period is approximately 3-5 days for most patients before a stable maintenance phase is achieved.

- Start Warfarin on day 1 or 2 of heparin therapy or as soon as able to take oral medicines. For patients with a thrombosis heparin should be continued for a minimum of 5 days (if treating an extensive thrombus consider a longer period of heparinisation or even thrombolysis).

- When the INR has been>2.0 for 2 consecutive days, stop heparin.

- Consider drugs and feeding regimens which may interfere with anticoagulant effect or control e.g. concurrent medication (regular and intermittent), TPN, oral types of feeds etc. If the child is on drugs which potentiate warfarin the loading dose may need adjusting.

- Warfarin should be prescribed on a separate specific 'Anticoagulant prescription sheet'. (see appendix)

- Reversal of warfarin and heparin link, Reversal of Heparin and Warfarin UHL Childrens Intensive Care Guideline

- Adolescents and adult females of child bearing age with mechanical valves will be advised on basis of this link: Anticoagulation for Pregnant Women with Mechanical Heart Valves UHL Obstetric Guideline

Initial dosing (day 1)

If INR baseline is 1.0 – 1.3, start with 0.2 mg/kg orally (maximum of 10mg)

If INR baseline is more than 1.3 reduce loading dose to 0.1 mg/kg

Measure INR Day 2 – 6

If your response is an INR of

| | | |
|---|---|---|
| INR | 1.1-1.4 | Repeat loading dose |
| INR | 1.4-1.9 | 50% of loading dose |
| INR | 2.0-3.0 | 50% of loading dose |
| INR | 3.0-4.0 | 25% of loading dose |
| INR | >4.5 | Omit dose until INR less than 4.5 then restart at 50% less than previous dose. |

If INR not greater than 1.5 on day 4 contact consultant haematologist for help.

| Long term control – day 6 onward | | |
|---|---|---|
| INR | 1.1-1.4 | Increase by 20% of dose |
| INR | 1.4-1.9 | Increase by 10% of dose |
| INR | 2.0-3.0 | No change |
| INR | 3.1-4.0 | Decrease by 10% dose |
| INR | 4.1-4.5 | Decrease by 20% dose |
| INR | >4.5 | Hold dose, check INR daily until INR <4.5 then restart at 20% less than previous dose. |

## 3. Education and Training

None

## 4. Monitoring Compliance

None identified at present

## 5. Key Words

Paediatric, Warfarin, Paediatric warfarin dosing, INR

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**The Trust recognises the diversity of the local community it serves. Our aim therefore is to provide a safe environment free from discrimination and treat all individuals fairly with dignity and appropriately according to their needs.**
**As part of its development, this policy and its impact on equality have been reviewed and no detriment was identified.**

| CONTACT AND REVIEW DETAILS | |
|---|---|
| **Guideline Lead (Name and Title):** Dr S Shebani Paediatric cardiologist | **Executive Lead:** **Chief medical officer** |
| **REVIEW RECORD** | |
| **Description Of Changes (If Any)**<br>03/02/2017 - No changes to content.<br>Format changes only to bring in-line with Trust recommendations<br>**17/12/2020 –**<br>**Added section 2.3- start warfarin when able to take oral medications and specified that patients with thrombosis should have a minimum of 5 days heparin treatment**<br>**Removed reference to GH**<br>**11/6/24; Clarified the presence of 2 guidelines one for paediatric cardiology and one for general paediatrics**<br>**Added link to Warfarin reversal**<br>**Added link to Warfarin in Pregnancy for mechanical valves which should apply for post Fontans** | |

Appendix: see below

# Paediatric Warfarin Prescription Chart

Patient's addressograph

| | |
|---|---|
| Hospital …….... | Ward …….. |
| Weight …….. | Date weighed ……... |
| Responsible Consultant …… | |

## Prescribing Information

**Indication** | **Target INR / range**

**New / continuation** *(delete as appropriate)* | **Start date** | **Intended duration: LIFELONG** | **Other Months ……**

| Date | INR | Machine number (if NPT used) | Warfarin dose | Prescriber's signature | Print name | Time given | Administered by | |
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Title: Paediatric Cardiology Warfarin Dosing
V: 4 Approved by: Children's Quality & Safety Board on : 26th July 2024 Next Review: July 2027
Trust Ref No: C197/2016

| Date | INR | Machine number (if NPT used) | Warfarin dose | Prescriber's signature | Print name | Time given | Administered by | |
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## Discharge information

**Warfarin dosing to be done by:-**

☐ **East Midlands Congenital Heart Service** ☐ **Other (specify) ……**

**INR testing done at:-**

☐ **Home** ☐ **Hospital** ☐ **GP**

…… …….
*(Specify hospital)* *(Specify GP)*

Tel no …… Tel no …… Tel no ……

**If home testing: training done by: Name …….. Date ……**

**NPT Machine Number ……**

**If hospital/GP: appointment arranged by: Name …… Date ……..**

**Warfarin counselling done** ***(please tick box)*** ☐ **Name …….. Date ……..**