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Royal Cornwall Hospitals NHS Trust

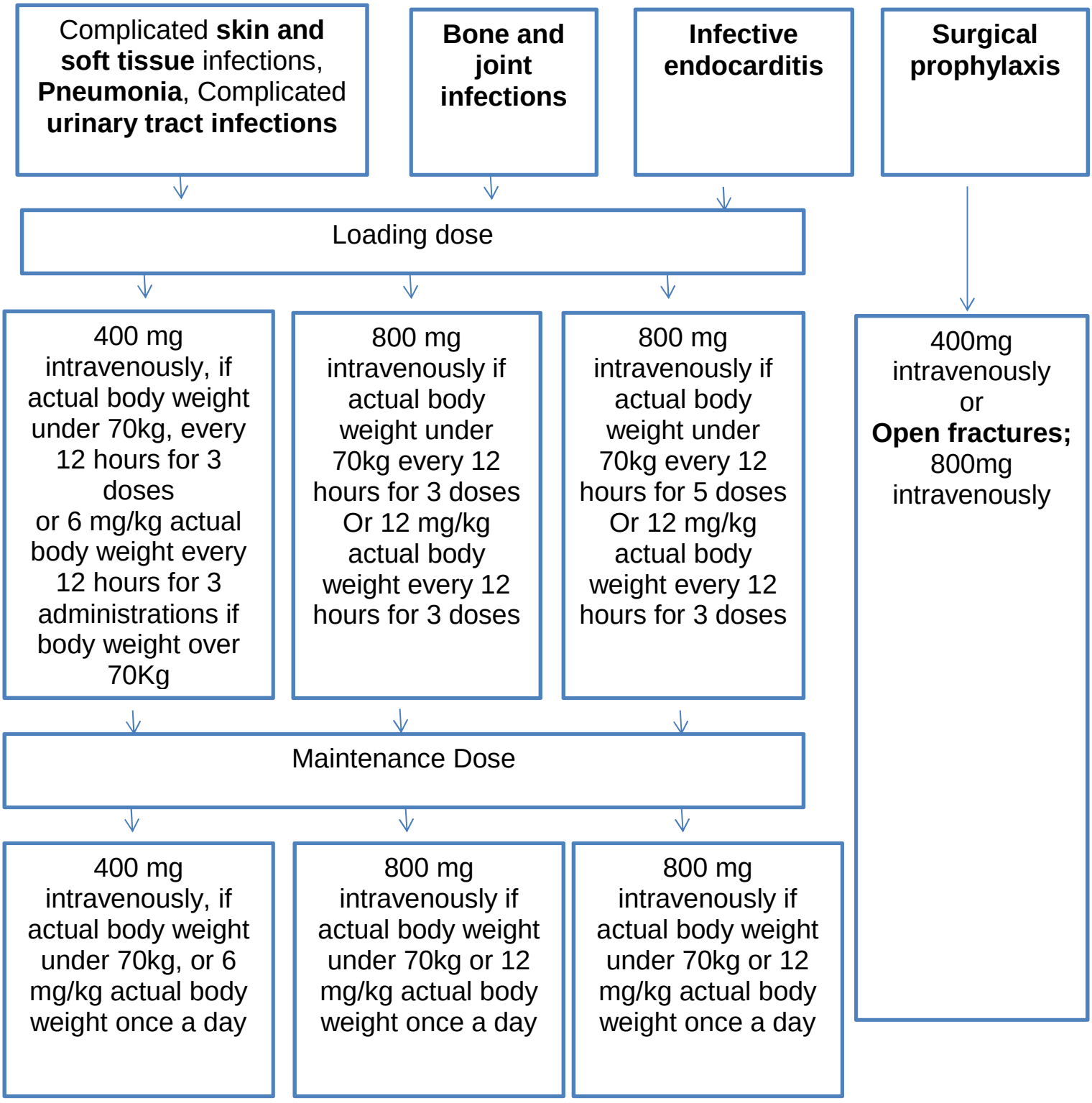
Teicoplanin Prescribing and Therapeutic Drug Monitoring Clinical Guideline

V2.0

March 2019

Summary

Click here for the full guideline



Measurement of serum concentrations

Measure serum trough concentrations at steady state i.e. after loading.

Adjust teicoplanin doses after the trough level is reported, do not withhold doses pending trough level reports.

Dose adjustments in renal impairments

- **not required until the** fourth day **of treatment**

eGFR 30-60ml/min Half normal dose for weight given daily OR Normal dose for weight given alternate days.

eGFR<30ml/min OR Haemodialysis patient 1/3 normal dose for weight given daily OR Normal dose for weight given every 3rd day.

1. Aim/Purpose of this Guideline

1.1. To provide guidance to RCHT staff on the prescribing and therapeutic drug monitoring for Teicoplanin therapy.

1.2. **Data Protection Act 2018 (General Data Protection Regulation – GDPR) Legislation**

The Trust has a duty under the DPA18 to ensure that there is a valid legal basis to process personal and sensitive data. The legal basis for processing must be identified and documented before the processing begins. In many cases we may need consent; this must be explicit, informed and documented. We can't rely on Opt out, it must be Opt in.

The DPA18 covers how the Trust obtains, hold, record, use and store all personal and special category (e.g. Health) information in a secure and confidential manner. This Act covers all data and information whether held electronically or on paper and extends to databases, videos and other automated media about living individuals including but not limited to Human Resources and payroll records, medical records, other manual files, microfilm/fiche, pathology results, images and other sensitive data.

DPA18 is applicable to all staff; this includes those working as contractors and providers of services.

For more information about your obligations under the DPA18 please see the 'information use framework policy', or contact the Information Governance Team rch-tr.infogov@nhs.net

2. The Guidance

2.1. For indications refer to the Trust Antimicrobial Guidelines on the Trust intranet or Microguide app on mobile devices.

2.2. Teicoplanin distributes well into lung, myocardium and bone tissues, blister fluids, synovial fluid and peritoneal fluid. Pleural fluid and subcutaneous fat tissue penetration is adequate. Teicoplanin does not readily penetrate into the cerebrospinal fluid (CSF).

2.3 No relationship between plasma concentrations and toxicity has been established. Plasma concentrations can be used as a guide to optimise treatment.

2.4 Long-term concurrent use of gentamicin and teicoplanin has the potential to cause additive ototoxicity.

2.5 Trough concentrations should be above 15 milligrams/L (above 20 milligrams/L in patients with endocarditis or with deep-seated infections such as those of the bones and joints) but less than 60 milligrams/L.

2.6 **Dosing and target trough level recommendations**:

Please see below for dosing adjustments in renal impairment

Indication	Loading dose	Maintenance dose	Target trough
-Complicated skin and soft tissue infections -Pneumonia -Complicated urinary tract infections	400 mg intravenously, if actual body weight under 70kg, every 12 hours for 3 doses or 6 mg/kg actual body weight every 12 hours for 3 administrations if body weight over 70Kg	6 mg/kg actual body weight intravenously once a day	>15 mg/L and <60mg/L
-Bone and joint infections	800 mg intravenously if actual body weight under 70kg every 12 hours for 3 doses or 12 mg/kg actual body weight every 12 hours for 3 to 5 doses	12 mg/kg actual body weight once a day	>20mg/L and <60mg/L
-Infective endocarditis	800 mg intravenously if actual body weight under 70kg every 12 hours for 5 doses or 12 mg/kg actual body weight every 12 hours for 5 doses	12 mg/kg actual body weight once a day	>30 mg/L and <60mg/L
Surgical prophylaxis	400mg intravenously up to 30 minutes before procedure Open fractures; 800mg intravenously up to 30 minutes before skeletal stabilisation and definitive soft-tissue closure	NA	NA

2.7 Measurement of serum concentrations

2.7.1. Teicoplanin trough serum concentrations should be monitored at steady state after completion of the loading dose regimen in order to ensure that a minimum trough serum concentration has been reached.

2.7.2. Teicoplanin dose adjustments should not be made until the trough level is reported. Do not withhold doses pending trough level reports.

2.7.3. Teicoplanin serum samples are sent to Bristol for analysis. Sample turnaround times are between 2 and 5 days depending on the day the sample is taken. Therefore, if the teicoplanin course is expected to be short, it may not be practical to do teicplanin levels.

2.8 Dose adjustments in renal impairment

2.8.1. Dose adjustment is not required until the fourth day of treatment, at which time dosing should be adjusted to maintain a serum trough concentration of at least 10 mg/L.

2.8.2. After the fourth day of treatment:

Renal Function	Dose Aim Trough level >10mg/L
eGFR 30-60ml/min	Half normal dose for weight given daily OR Normal dose for weight given alternate days (Whichever is more convenient)
eGFR<30ml/min OR Haemodialysis patient (Teicoplanin is not cleared by haemodialysis)	1/3 normal dose for weight given daily OR Normal dose for weight given every 3rd day (Whichever more convenient)

3. Monitoring compliance and effectiveness

Element to be monitored	Appropriate dosing according to patient weight and infection type. Appropriate teicoplanin level monitoring.
Lead	Antibiotic Pharmacist
Tool	In development
Frequency	Six monthly monitoring and reporting.
Reporting arrangements	Antibiotic Stewardship Management Committee. Recorded in meeting minutes
Acting on recommendations and Lead(s)	Antibiotic Stewardship Management Committee.
Change in practice and lessons to be shared	Required changes to practice will be identified and actioned within one month. A lead member of the team will be identified to take each change forward where appropriate. Lessons will be shared with all the relevant stakeholders

4. Equality and Diversity

4.1. This document complies with the Royal Cornwall Hospitals NHS Trust service Equality and Diversity statement which can be found in the 'Equality, Inclusion & Human Rights Policy' or the Equality and Diversity website.

4.2. *Equality Impact Assessment*

The Initial Equality Impact Assessment Screening Form is at Appendix 2.

Appendix 1. Governance Information

Document Title	Teicoplanin Prescribing and Therapeutic Drug Monitoring Clinical Guideline V2.0				
Date Issued/Approved:	February 2019				
Date Valid From:	March 2019				
Date Valid To:	March 2022				
Directorate / Department responsible (author/owner):	Neil Powell, Pharmacist				
Contact details:	01872 252590				
Brief summary of contents	Teicoplanin prescribing and monitoring.				
Suggested Keywords:	Teicoplanin				
Target Audience	RCHT	CFT	KCCG		
	✓				
Executive Director responsible for Policy:	Medical Director				
Date revised:	October 2018				
This document replaces (exact title of previous version):	Clinical Guideline for Teicoplanin Prescribing And Therapeutic Drug Monitoring V1.0				
Approval route (names of committees)/consultation:	Medicines Practice Committee				
Divisional Manager confirming approval processes	Iain Davidson				
Name and Post Title of additional signatories	Not Required'				
Name and Signature of Divisional/Directorate Governance Lead confirming approval by specialty and divisional management meetings	{Original Copy Signed}				
	Name: Kevin Wright				
Signature of Executive Director giving approval	{Original Copy Signed}				
Publication Location (refer to Policy	Internet & Intranet	✓	Intranet Only		

on Policies – Approvals and Ratification):				
Document Library Folder/Sub Folder	Clinical / Pharmacy			
Links to key external standards	https://www.medicines.org.uk/emc/			
Related Documents:	*NA*			
Training Need Identified?	*NA*			

Version Control Table

Date	Version No	Summary of Changes	Changes Made by *(Name and Job Title)*
May 2015	1.0	Initial issue	Neil Powell, Antibiotic Pharmacist
October 2018	2.0	none	Neil Powell, Antibiotic Pharmacist

Appendix 2. Initial Equality Impact Assessment Form

This assessment will need to be completed in stages to allow for adequate consultation with the relevant groups.

<table>
<tr><td colspan="6">Name of Name of the strategy / policy /proposal / service function to be assessed
Teicoplanin Prescribing and Therapeutic Drug Monitoring Clinical Guideline V2.0</td></tr>
<tr><td colspan="3">Directorate and service area:
CSSC, Pharmacy</td><td colspan="3">Is this a new or existing Policy:
Existing</td></tr>
<tr><td colspan="3">Name of individual completing assessment:
Neil Powell</td><td colspan="3">Telephone:
01872 252590</td></tr>
<tr><td>1. Policy Aim*

Who is the strategy / policy / proposal / service function aimed at?</td><td colspan="5">Safe and effective teicoplanin prescribing</td></tr>
<tr><td>2. Policy Objectives*</td><td colspan="5">Safe and effective teicoplanin prescribing</td></tr>
<tr><td>3. Policy – intended Outcomes*</td><td colspan="5">Improve infection outcome through dose optimisation.</td></tr>
<tr><td>4. *How will you measure the outcome?</td><td colspan="5">Six monthly review</td></tr>
<tr><td>5. Who is intended to benefit from the policy?</td><td colspan="5">Inpatients at Royal Cornwall Hospital</td></tr>
<tr><td rowspan="3">6a Who did you consult with

b). Please identify the groups who have been consulted about this procedure.</td><td>Workforce</td><td>Patients</td><td>Local groups</td><td>External organisations</td><td>Other</td></tr>
<tr><td>✓</td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="5">Please record specific names of groups

Medication Practice Committee</td></tr>
<tr><td>What was the outcome of the consultation?</td><td colspan="5">Guideline agreed</td></tr>
</table>

7. The Impact
Please complete the following table. **If you are unsure/don't know if there is a negative impact you need to repeat the consultation step**.

Are there concerns that the policy **could** have differential impact on:

Equality Strands:	Yes	No	Unsure	Rationale for Assessment / Existing Evidence
Age		**No**		
Sex (male, female, trans-gender / gender reassignment)		**No**		
Race / Ethnic communities /groups		**No**		
Disability - Learning disability, physical impairment, sensory impairment, mental health conditions and some long term health conditions.		**No**		
Religion / other beliefs		**No**		
Marriage and Civil partnership		**No**		
Pregnancy and maternity		**No**		
Sexual Orientation, Bisexual, Gay, heterosexual, Lesbian		**No**		

You will need to continue to a full Equality Impact Assessment if the following have been highlighted:

- You have ticked "Yes" in any column above and
- No consultation or evidence of there being consultation- this excludes any *policies* which have been identified as not requiring consultation**. or**
- Major this relates to service redesign or development

8. Please indicate if a full equality analysis is recommended.			**No**	**tick**

9. If you are **not** recommending a Full Impact assessment please explain why.

This guideline does not impact any of the groups listed above

Signature of policy developer / lead manager / director	Date of completion and submission
Neil Powell	October 2018

Names and signatures of members carrying out the Screening Assessment	1. Neil Powell 2. Human Rights, Equality & Inclusion Lead	

Keep one copy and send a copy to the Human Rights, Equality and Inclusion Lead
c/o Royal Cornwall Hospitals NHS Trust, Human Resources Department, Knowledge Spa, Truro, Cornwall, TR1 3HD

This EIA will not be uploaded to the Trust website without the signature of the Human Rights, Equality & Inclusion Lead.

A summary of the results will be published on the Trust's web site.

Signed __ Neil Powell

Date ____ October 2018