

Multi-resistant Lower Urinary Tract Infection (UTI) Guidance in Primary Care

Authors: Mini Satheesh, Dr A Swann, Dr P Danaher and Joanne Charles

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This guidance covers: UTI in patients with previous multi-drug resistance (e.g. ESBL producing strains) OR patients who are symptomatic post standard treatment in primary care OR patients with a multi-resistant Gram-negative culture results. Exclude Pyelonephritis

Many bacteria (e.g. the Gram-negatives *Escherichia coli* (*E.coli*) and *Klebsiella* species) are capable of developing resistance to a variety of antibiotics. In some instances this is associated with production of certain enzymes (e.g. ESBLs) but the exact mechanism does not directly impact on treatment and is no longer reported. Multi-resistant organisms may cause UTI that can progress to more serious infections which can be life threatening and difficult to treat.

Ensure a borated MSU or CSU is taken immediately and sent to the Microbiology lab



Some multi-resistant strains may be sensitive to nitrofurantoin (and less often, trimethoprim. If previously had a UTI caused by a multidrug resistant organism and sensitivities allow :

1st line Nitrofurantoin 100mg m/r BD if appropriate

2nd line Trimethoprim 200mg BD (if previously shown to be sensitive).

In pregnant women use agents recommended in the primary care UTI guidance

Duration : 3 days for women of all ages and 7 days for men, catheterised patients and pregnant women



Culture results available and does this indicate sensitivity to Nitrofurantoin (or Trimethoprim)?

YES

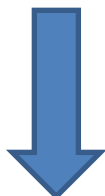
NO - based on sensitivity results prescribe



Continue treatment to complete course as recommended above with :

1st line: Nitrofurantoin 100mg BD

2nd line: Trimethoprim 200mg BD.



Drug	Dose	Duration
Pivmecillinam oral (Do not use in penicillin allergy)	Women (not pregnant or catheterised) : Initially 400mg then 200mg every 8 hours Men, catheterised patients and pregnant women: 400mg TDS	3 days 7 days
Fosfomycin oral (See appendix A for information related to availability in primary care)	Women (not pregnant or catheterised) : 3g-one off dose Men , catheterised patients and pregnant women: 3g stat and a second dose of 3g THREE days later	STAT As described
Ertapenem IV (When oral options not possible/contraindicated or results indicate sensitivity to ertapenem only). Refer via SPA to district nurse and complete authorisation form (Appendix B)	1 gram every 24 hours. Prescribe with 10 ml of water for injection for reconstitution and 100 ml bag of sodium chloride 9 mg/ml (0.9 %) solution for dilution. <i>If Cr Cl < 30 ml/min but > 10 ml/min discuss with microbiologist or specialist antimicrobial pharmacist to consider 500mg OD (50% of dose) which is unlicensed.</i>	5 days

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Appendix A:

How to obtain oral fosfomycin in primary care

Oral fosfomycin may not be routinely stocked by all community pharmacies. To avoid undue delay a list of all the out of hours/extended hours community pharmacies that stock oral fosfomycin can be found on the LMSG website via the following link:

[Community Pharmacies Stocking Palliative and Emergency Medication and ESBL Medication in Leicestershire](#)

Fosfomycin is now a licensed drug and drug information available in the BNF Edition 72 (Sept 2016 – March 2017)

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Appendix B: Nurse Authorisation Form (IV ERTAPENEM)

AUTHORISATION FOR MEDICATION/TREATMENT (IV ERTAPENEM)

Requested by (Doctor/IP Name):

Date:

Practice details/contact number:

Patients Name: D.O.B:

Address:.....

Please administer **Ertapenem IV 1 gram every 24 hours infused over a period of 30 minutes** as per ESBL UTI Primary care pathway for 5 days.

Start date:.....

A dose can be administered up to 2 hours before or 2 hours after the 24 hour dose window if flexibility is required

Administer 5mls Sodium Chloride 0.9% pre and post administration of antibiotic.

Reconstitution

Reconstitute the contents of a 1 g vial of Ertapenem with 10 ml of water for injection to yield a reconstituted solution of approximately 100 mg/ml. Shake well to dissolve.

Dilution

For a 100 ml bag of sodium chloride (0.9%)(diluent) : For a 1 g dose, withdraw 60 ml from a 100 ml bag of sodium chloride 9 mg/ml (0.9 %) solution and discard. Transfer the contents of the reconstituted 1 g vial of ertapenem to the 100 ml bag of sodium chloride 9 mg/ml (0.9 %) solution. Diluted solutions should be used immediately.

No dose adjustments required in hepatic impairment.

In the absence of severe renal impairment, no dose adjustment is necessary in elderly patients.

In renal impairment (Cr Cl <30 ml/min but >10 ml/min) discuss with microbiologist to consider a dose of 500mg OD (50% of dose) which is unlicensed.

For more information refer to the product leaflet or injectable medicines guide.

Signature of Doctor/ Independent Prescriber:.....

GP to prescribe

- IV Ertapenem
- 10 ml of water for injection for reconstitution
- 100 ml bag of sodium chloride 9 mg/ml (0.9 %) solution for dilution [Braun product code 436322 supplied via major wholesalers. Alliance product code 6336416 box of 20 =£11]

These may not be routinely stocked by all community pharmacies. To avoid undue delay a list of all the out of hours/extended hours community pharmacies that stock these can be found on the LMSG website [Community Pharmacies Stocking Palliative and Emergency Medication and ESBL Medication in Leicestershire](#)

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ORIGINATORS: Mini Satheesh, Dr A Swann, Dr P Danaher and Joanne Charles
REVIEWERS: Dr A Swann, Mini Satheesh, Ryan Hamilton
APPROVED BY : Leicestershire Medicines Strategy Group
RATIFIED BY: Antimicrobial Working Party

Review record

Date	Issue No.	Reviewed By	Description of change (if any)
Dec 2016	2	Dr A Swann, Mini Satheesh ,Ryan Hamilton	<ul style="list-style-type: none"> • ESBL Guidance title changed to Multi-resistant Guidance • Updated dose and guidance in line with primary care UTI guidance version 5 , Dec 2016 • Deleted Fosfomycin drug information as licensed and details available in BNF No. 72 (Sept 2016 – March 2017) and the electronic Medicines Compendium(eMC) • Link to list of pharmacies that stock Fosfomycin and Ertapenem updated
Dec 2017		DS	Link to list of Pharmacies amended.

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