CPD June 2023: Fosfomycin

Sharon Rees

**[Dr Sharon Rees](https://twitter.com/reesprescribe)**

Day 1: Originally derived from streptomyces bacteria (1960s), the main use for the synthetic oral form of [#fosfomycin](https://twitter.com/hashtag/fosfomycin?src=hashtag_click) since the 1990s is for uncomplicated UTIs. Still available i.v for osteomyelitis; RTI & complicated UTIs

Day 2: [#fosfomycin](https://twitter.com/hashtag/fosfomycin?src=hashtag_click) is used 2nd -3rd line for uncomplicated UTI as the oral formulation of [#fosfomycin](https://twitter.com/hashtag/fosfomycin?src=hashtag_click) trometamol as a single dose therapy 3g for those over 12yrs. SPC also states used for female cystitis & peri-opertive prophylaxis in transrectal prostate biopsy in men. Granules are dissolved in water & taken stat.

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Day 3: [#fosfomycin](https://twitter.com/hashtag/fosfomycin?src=hashtag_click) should be taken on an empty stomach at bedtime & after emptying bladder. There is no known drug metabolism. #fosfomycin is distributed into the urinary tract in high concentrations. Unchanged drug is excreted in urine for minimum 24 hrs, hence single dose. T½ ~ 6 hrs. This is prolonged in severe renal failure (do not use)

Day 4: [#fosfomycin](https://twitter.com/hashtag/fosfomycin?src=hashtag_click) MOA is to inactivate the MurA enzyme needed for peptidoglycan/cell wall synthesis. Rapid bactericidal effect with low toxicity. Covers a wide spectrum of bacteria including some resistant organisms e.g MRSA, ESBL organisms & glycopeptide resistant enterococci

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Day 5: [#fosfomycin](https://twitter.com/hashtag/fosfomycin?src=hashtag_click) adverse drug effects (ADEs) for oral formulation. Common include GI effects e.g diarrhoea, vulvovaginitis & headache. Uncommon include vomiting, rash. Not known are antibiotic associated colitis, hypersensitivity reactions & angioedema (NOT exhaustive)

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Day 6: [#fosfomycin](https://twitter.com/hashtag/fosfomycin?src=hashtag_click) drug-drug interactions. There are none stated in BNF! SPC states metoclopramide lowers concentration & any drug which increases gut motility should be avoided. May affect INR

Day 7. There is growing interest in using #fosfomycin for multi-drug resistant infections. The unique structure & mechanism of action mean no/minimal no cross-resistance & also low acquired resistance. There is known resistance to UTIs from staphylococcus saprophyticus

CPD

In addition to the tweets, read the BNF treatment summary on Urinary-tract infections, and the monograph for fosfomycin, as well as the Summary of Product Characteristics for Monuril (fosfomycin)

<https://bnf.nice.org.uk/treatment-summaries/urinary-tract-infections/>

<https://bnf.nice.org.uk/drugs/fosfomycin/>

<https://www.medicines.org.uk/emc/product/7329/smpc#gref>

1. Fosfomycin is used as a one dose tablet to treat uncomplicated urinary tract infections (UTIs)

TRUE or FALSE

1. Originally, fosfomycin was derived from soil bacteria

TRUE or FALSE

1. Which of the following is TRUE?
2. Fosfomycin is typically used first-line for UTIs
3. Fosfomycin should be taken on an empty stomach
4. Fosfomycin should be used first-line in pregnancy for UTI
5. Fosfomycin is licensed for use in all age groups
6. Which of the following is NOT related to the single dose regimen for fosfomcyin?
7. High concentration of drug in the urinary tract
8. Duration of urinary tract contact with antibiotic over at least 24 hours
9. Extensive drug metabolism
10. Renal excretion
11. Fosfomycin is a broad spectrum antibiotic

TRUE or FALSE

1. Fosfomycin is bacteriostatic

TRUE or FALSE

1. Which of the following is TRUE?
2. Fosfomycin inhibits bacterial cell wall synthesis but by a different route to penicillins
3. Fosfomycin drills holes in the bacterial cell membrane
4. Fosfomycin blocks protein synthesis
5. Fosfomycin alters the osmotic balance in the cell and causes it to shrivel
6. There is currently no relevant antibiotic resistance to Fosfomycin

TRUE or FALSE

1. Fosfomycin is active against ESBL producing bacteria

TRUE or FALSE

1. Which of the following is a common adverse drug effect for fosfomycin?
2. Hypersensitivity reactions
3. Antibiotic associated colitis
4. Rash
5. Diarrhoea