

DTB CME/CPD Answers



Drug and Therapeutics Bulletin

Fosfomycin for UTIs

Question 1

Approximately 50% of women experience at least one urinary tract infection (UTI) in their lifetime. What proportion of women experience a recurrence of UTI?

- a. 10%
- b. 15%
- c. 25%
- d. 33%
- e. 50%

Answer: c. The prevalence is higher in women than men, with approximately 50% of women experiencing at least one infection in their lifetime and 25% experiencing a recurrence.

Question 2

Empirical antibiotic treatment, based on the presence and severity of symptoms, is recommended for non-pregnant women under the age of 65 years who present with acute uncomplicated lower UTIs. Which one of the following antibacterial agents is generally recommended as a first-line treatment in the UK?

- a. Ampicillin
- b. Cefadroxil
- c. Co-amoxiclav
- d. Nitrofurantoin
- e. Ofloxacin

Answer: d. Nitrofurantoin is the preferred first-line drug because general resistance and the incidence of community multiresistant extended-spectrum beta-lactamase (ESBL)-producing *Escherichia coli* are increasing.

Question 3

Fosfomycin trometamol is a broad spectrum antibiotic recently marketed in the UK for the treatment of acute uncomplicated lower UTIs. Which one of the following statements regarding fosfomycin's mode of action is correct?

- a. It promotes the formation of acetylmuraminic acid
- b. It acts on the late stage of bacterial cell wall synthesis
- c. It irreversibly inhibits UDP-N-acetylglucosamine enolpyruvyl transferase
- d. Uptake of fosfomycin involves passive transport into the bacterial cell
- e. It inhibits the last step in peptidoglycan chain formation of the bacterial wall

Answer: c. It irreversibly inhibits the enzyme UDP-N-acetylglucosamine enolpyruvyl transferase.

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Question 4

A meta-analysis included an evaluation of the in vitro antimicrobial activity of fosfomycin against drug resistant pathogens from the urinary tract. What proportion of ESBL-producing *E. coli* isolates was susceptible to fosfomycin?

- a. 65%
- b. 77%
- c. 84%
- d. 93%
- e. 98%

Answer: e. Among the resistant pathogen isolates in the urinary tract, fosfomycin retained its in vitro activity against 92.5% of all multiresistant ESBL-producing *Enterobacteriaceae* and 97.6% of ESBL-producing *E. coli*.

Question 5

Which one of the following statements regarding the dose and administration of fosfomycin trometamol granules for oral solution is correct?

- a. The absolute oral bioavailability is reduced from 37% to 30% by food
- b. It is metabolised in the liver and has an elimination half-life of 24 hours
- c. The recommended dose for treating an uncomplicated lower UTI is 3g daily for 2 days
- d. Its use is contraindicated if creatinine clearance <45mL/min
- e. It should be taken in the morning, before emptying the bladder

Answer: a. Fosfomycin is rapidly absorbed after oral administration, with an absolute oral bioavailability of 37% when fasting, which is reduced to 30% by food.