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?

- 10%
- 15%
- 25%
- 33%
- 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?

- Ampicillin
- Cefadroxil
- Co-amoxiclav
- Nitrofurantoin
- 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?

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

Answer: c. It irreversibly inhibits the enzyme UDP-N-acetylgulosamine 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.