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CASE REPORT

Prolonged course of Fosfomycin-Trometamol for chronic prostatitis: an unknown good option

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ABSTRACT

Background: Bacterial prostatitis can be difficult to treat as more and more bacteria are resistant to fluoroquinolone and/or Sulfamethoxazole-Trimethoprim which are the antibiotics of choice. Fosfomycin-Trometamol which is registered for uncomplicated urinary tract infections can be an option when other treatments can't be used.

Objective: To describe a case of prostatitis cured using a prolonged course of Fosfomycin-Trometamol. Patient: A 67 years-old man with a chronic bacterial prostatitis, with recurrences for more than 3 years, due to *E. coli* was treated with Fosfomycin-Trometamol 3g once a day for a week followed by 3 months of the same dose every two days. Prostatitis was clinically and bacteriologically cured and no relapse occurred after 6 months of follow-up.

Conclusion: Fosfomycin-Trometamol can be a good option for the treatment of bacterial prostatitis when other antibiotics can't be used either for resistance or allergy.

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Introduction

Fosfomycin-Trometamol is widely used for uncomplicated urinary tract infections in women. It is, in many countries, one of the first options in guidelines. In this case, the dosage used is 3 g of Fosfomycin once, taken orally. It is also used as prophylaxis for patients who present recurrent urinary tract infections to sterilize urines once a week for example. To date, there are no recommendations for its use for pyelonephritis or prostatitis. However, Fosfomycin-Trometamol has been used for patients with chronic prostatitis. A recent review highlighted its efficacy through case reports and small case series [1]. We report here a new case that shows the interest of this molecule for the treatment of chronic prostatitis when other antibiotics failed or were not usable due to resistances.

Case report

M. L., 67 years-old, with a medical history of urethral stenosis and prostatic surgery presented since 2017 recurrent urinary infections. Infections were due to *Escherichia coli*. He received several treatments but recurrences regularly occurred. In 2018, he weekly took Fosfomycin-Trometamol. This treatment reduced the number of recurrences which however still occurred. In 2020 he presented in March and April two infections due to *E. coli* resistant to Fluoroquinolones and Sulfamethoxazole-Trimethoprim. He was then referred to our consultation. An outpatient antibiotic treatment (OPAT) relying on a prolonged course (6 weeks) of a high dose of Ceftriaxone (2 g qd) was prescribed. With this treatment, the patient improved but unfortunately, a recurrence occurred 3 weeks after the end of this treatment. Urinalysis retrieved the same bacteria. There were no risk factors of urine infection and there was no urethral stenosis' relapse, no post-void residue and no prostatic abscess found during the last urologist's consultation. We then decided to use Fosfomycin-Trometamol for which the bacterium was still susceptible. As to date, there is no recommendation on the dosage, we prescribed 3 g once-a-day for one week and then 3 g every two days for a total course of 3 months. There was no side effect reported by the patient. During the treatment and six months after the end of the treatment, there was no relapse of infection.

Discussion

Intravenous Fosfomycin, due to its small size, has a good diffusion into various tissues. However, Fosfomycin-Trometamol, given orally, yields levels in serum about 10 times lower than those of Fosfomycin given intravenously, leading to limited indications such as low urinary tract infection [2]. However, some studies found adequate concentrations in non-inflamed prostate [3] in regards to EUCAST Clinical Breakpoint of 8 mg/L for Enterobacterales. Bacteria harboring a MIC $\geq$ 16 mg/L should not be treated with this treatment as local concentrations might be non-sufficient. This was the case in one study where a majority of fails were related to such an MIC [4]. Moreover, higher concentrations are expected in an inflamed prostate.

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Fosfomycin has a wide spectrum of activity including Gram-positive and Gram-negative bacteria as it targets bacterial cell wall, inhibiting its synthesis [2]. As this mechanism is different from other antibacterial families, there are only low cross-resistance among Enterobacterales. To date, the prevalence of Fosfomycin resistance in *E. coli* is low. Studies from several countries (China, Turkey, Switzerland [5] for example) estimate this prevalence around 1.8%. This allows treating bacteria that are resistant to other antibiotic families and even ESBL-producing Enterobacteriaceae [6].

Main reported side effect is diarrhea. It seems to be linked with dosing interval as it is more described when prescribed every day than every two days. That was the case for our patient who did not complain of any side effects with a prolonged course every two days.

In the literature, less than 70 patients received this antibiotic for the treatment of chronic bacterial prostatitis and there is a heterogeneity in the protocols used [1]. Length of treatment varied as well as dosing interval. There was sometimes other antibiotic associated at least at the beginning. However, results were encouraging and, for example, in a prospective cohort the clinical cure was 80% at 6 months [4].

Our experience adds some supplemental data favoring the use of Fosfomycin-Trometamol for patients experiencing complicated to treat chronic bacterial prostatitis, using an orally available antibiotic, well-tolerated when administered every two days with a low level of resistance.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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