

Letter

Inappropriate Prescribing of Cefixime 400 mg Every 12 Hours Dose

Durr-e-Shahwar Siddiqui

Department of Pharmacology, Faculty of Pharmacy and Pharmaceutical Sciences, University of Karachi, Pakistan

ORCID:

Durr-e-Shahwar Siddiqui: <https://orcid.org/0000-0003-1448-9970>

Dear Editor,

Cefixime is a third-generation cephalosporin that treats otitis media, bronchitis, pharyngitis, urinary tract infection, uncomplicated gonorrhoea, typhoid fever, and other infectious diseases. Cefixime falls in pregnancy category B as per Food & Drug Administration. The day-by-day increasing use of cefixime by humans for mild infections and its inappropriate prescribing is giving rise to the development of microbial resistance against this beneficial antibiotic. Every four out of five discharge summaries of postoperative lower segment caesarean section patients contained cefixime 400 milligrams (mg) every 12 hr dose (twice a day) for 7 to 10 days as prophylactic therapy at a Secondary Care Hospital of Pakistan. Moreover in adults, prescribing of cefixime 400 mg every 12 hr dose for mild infections by clinicians is becoming a common practice without any authentic clinical guideline. Prescribers generally confuse 200 mg every 12 hr dose with 400 mg every 12 hr dose of cefixime. The reported adverse effects of cefixime are mostly related to gastrointestinal tract, and amongst them diarrhoea is the most frequent [1]. Certain prescribers consider that 200 mg every 12 hr dose of cefixime carries less chance of diarrhoea and other gastrointestinal adverse effects than 400 mg every 24 hr dose (once a day).

In reality, although 200 mg every 12 hr dose of cefixime takes slightly less time to reach maximum plasma concentration (C_{max}) than 400 mg every 24 hr dose, however, it is not highly significant and has no added clinical advantage. It only increases the cost of therapy and such inappropriate or irrational dosing of cefixime leads to microbial resistance. Additionally, cefixime does not accumulate in serum or urine, and irrespective of the dosage – 200 mg twice a day or 400 mg once a day – its concentration in urine while clearance from the body also does not vary significantly. Moreover, 4.74 mg/L is the maximum serum concentration of cefixime antibiotic that is achieved at 3.9 hr through a single dose of 400 mg, while half-life of cefixime is 3.5 hr. The usual recommended

Corresponding Author:
Durr-e-Shahwar Siddiqui;
email:
silver_shine27@hotmail.com

Received 31 October 2022
Accepted 30 January 2023
Published 30 June 2023

Production and Hosting by
Knowledge E

© Durr-e-Shahwar Siddiqui. This article is distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use and redistribution provided that the original author and source are credited.

Editor-in-Chief:
Prof. Nazik Elmalaika Obaid
Seid Ahmed Husain, MD,
M.Sc, MHPE, PhD.

 OPEN ACCESS

dose of cefixime in pediatric population is 4 mg/kg every 12 hr or 8 mg/kg every 24 hr apart. For adults, the usual recommended dose in most of the infectious diseases is 400 mg every 24 hr or 200 mg every 12 hr. The duration of therapy depends upon the severity and type of infection. Usually, the therapy of cefixime lasts up to 5, 7, 10, or maximum 14 days. In the treatment of uncomplicated gonorrhoea, single dose of 800 mg cefixime appears effective [2].

The International Academy of Philippines (IAP) recommended a cefixime dose of 400 mg every 12 hr for adults and 10 mg/kg every 12 hr for pediatric populations for 7 to 14 days in uncomplicated typhoid fever and as empiric therapy for suspected enteric fever after baseline investigations are sent [3]. It was also reported that 400 mg every 12 hours dose of cefixime for 10 days for early syphilis carried safety as a major benefit and 87% of patients were treated successfully [4]. None of the established data till date supports the use of 400 mg every 12 hr dose of cefixime for mild infections or in post-surgical prophylaxis of infections. Clinical interventions by pharmacists for cefixime in postoperative surgical prophylaxis reduced the surgical site infection from 21% to 15% [5].

The prescribing of cefixime in correct doses must be promoted as per diagnosis and culture sensitivity of micro-organisms. Authentic clinical guidelines must be considered for antibiotic prescribing in all healthcare set-ups worldwide. Inappropriate prescribing of 400 mg every 12 hr dose of cefixime for mild infections or for prophylaxis of postoperative infections such as in lower segment caesarean sections must be highly discouraged. Pharmacists must play active role in prescriptions review and determine the correct dose for patients keeping in view the diagnosis and available culture sensitivity results. Prescribers must also be convinced to prescribe appropriate dose of cefixime as per authentic clinical guidelines.

Acknowledgements

None.

Competing Interests

The author declares that there is no conflict of interest to disclose.

Funding

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

References

- [1] British National Formulary. (2022). Bacterial infection. *BNF*, 82, 487.
- [2] Hazra, A., Collison, M. W., & Davis, A. M. (2022). CDC Sexually Transmitted Infections Treatment Guidelines, 2021. *Journal of the American Medical Association*, 327(9), 870–871. <https://doi.org/10.1001/jama.2022.1246>
- [3] Medical Microbiology and Infectious Diseases Society of Pakistan. (2019). *Typhoid management guidelines*. MMIDSP. <https://www.mmidsps.com/typhoid-management-guidelines-2019/>
- [4] Stafylis, C., Keith, K., Mehta, S., Tellalian, D., Burian, P., Millner, C., & Klausner, J. D. (2021). Clinical efficacy of cefixime for the treatment of early syphilis. *Clinical Infectious Diseases*, 73(5), 907–910. <https://doi.org/10.1093/cid/ciab187>
- [5] Butt, S. Z., Ahmad, M., Saeed, H., Saleem, Z., & Javaid, Z. (2019). Post-surgical antibiotic prophylaxis: Impact of pharmacist's educational intervention on appropriate use of antibiotics. *Journal of Infection and Public Health*, 12(6), 854–860. <https://doi.org/10.1016/j.jiph.2019.05.015>