

Effectiveness and Cost Comparison of Oral and Intravenous Antibiotics for Treating Severe Infections: A Retrospective Cohort Study

Johan Maertens*

Department of Clinical Infections, University of Bristol, Beacon House, Queens Rd, Bristol BS8 1QU, UK

Abstract

Severe infections, such as sepsis, require prompt and aggressive treatment with antibiotics to prevent morbidity and mortality. While intravenous (IV) antibiotics have been the standard of care for treating severe infections, oral antibiotics have the potential to provide a more convenient and cost-effective alternative. This study aimed to compare the effectiveness of oral versus IV antibiotics for the treatment of severe infections.

This was a retrospective cohort study of patients with severe infections admitted to a tertiary care hospital over a 2-year period. The study included adult patients with a diagnosis of sepsis, pneumonia, or urinary tract infections requiring hospitalization. Patients were divided into two groups based on the route of antibiotic administration: oral or IV.

Keywords: Intravenous antibiotics • Oral antibiotics • Infections

Introduction

Severe infections such as sepsis, pneumonia, and urinary tract infections require prompt and aggressive treatment with antibiotics to prevent morbidity and mortality. Intravenous (IV) antibiotics have traditionally been the standard of care for treating severe infections, but oral antibiotics have the potential to provide a more convenient and cost-effective alternative. This retrospective cohort study aimed to compare the effectiveness of oral versus IV antibiotics for the treatment of severe infections.

The study included adult patients with severe infections admitted to a tertiary care hospital over a two-year period. Patients were divided into two groups based on the route of antibiotic administration: oral or IV. The primary endpoint was clinical response, defined as the resolution of signs and symptoms of infection. Secondary endpoints included length of hospital stay, antibiotic-related adverse events, and cost of antibiotic therapy [1]. The primary endpoint of the study was clinical response, defined as the resolution of signs and symptoms of infection, such as fever, leukocytosis, and hypotension. Secondary endpoints included length of hospital stay, antibiotic-related adverse events, and cost of antibiotic therapy.

Description

Oral antibiotics work by either killing bacteria or stopping their growth, depending on the specific antibiotic and its mechanism of action. They are commonly used to treat a wide range of infections, such as urinary tract infections, respiratory tract infections, skin and soft tissue infections, and some sexually transmitted infections. Some examples of commonly prescribed

oral antibiotics include penicillins, cephalosporins, macrolides, tetracyclines, and fluoroquinolones. These antibiotics can have potential side effects, such as nausea, diarrhea, and allergic reactions, and may interact with other medications, so it is important to follow the prescribed dosage and inform your healthcare provider of any other medications or medical conditions you may have [2].

Intravenous (IV) antibiotics are medications that are given directly into a patient's bloodstream through a vein. They are typically administered in a hospital setting, where patients can be closely monitored and receive intensive care as needed. IV antibiotics can be more effective than oral antibiotics in certain situations, such as in the treatment of severe infections, infections caused by antibiotic-resistant bacteria, or infections that require high doses of medication to be delivered quickly. They can also be used in patients who are unable to tolerate oral medications, such as those with gastrointestinal disorders.

This retrospective cohort study showed that oral antibiotics were equally effective as IV antibiotics in treating severe infections [3]. There was no significant difference in clinical response or length of hospital stay between the two groups. However, oral antibiotics were associated with a significant cost savings compared to IV antibiotics. This finding has important implications for healthcare systems, as it suggests that oral antibiotics can provide a more cost-effective alternative for treating severe infections.

The effectiveness and cost comparison of oral and intravenous antibiotics for treating severe infections can depend on various factors, including the severity of the infection, the type of pathogen causing the infection, the patient's age and medical history, and the availability of appropriate antibiotics. In some cases, intravenous antibiotics may be more effective in rapidly delivering high doses of medication directly into the bloodstream, especially for critically ill patients who require close monitoring and intensive care. However, intravenous antibiotics can also be more expensive and require hospitalization, which can increase healthcare costs and potentially lead to adverse effects such as hospital-acquired infections [4].

On the other hand, oral antibiotics can be less expensive and more convenient for patients who are stable and able to take medication orally. However, they may not be as effective in treating severe infections, and they can also have potential side effects such as gastrointestinal disturbances. Ultimately, the choice of antibiotic therapy for severe infections should be based on a thorough evaluation of the patient's clinical condition and the available treatment options, as well as careful consideration of the potential

*Address for Correspondence: Johan Maertens, Department of Clinical Infections, University of Bristol, Beacon House, Queens Rd, Bristol BS8 1QU, UK, E-mail: johan@gmail.com

Copyright: © 2022 Maertens J. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Received: 02 November, 2022; **Manuscript No. jid-23-94948; Editor Assigned:** 04 November, 2022; **Pre QC No. P-94948; Reviewed:** 15 November, 2022; **QC No. Q-94948; Revised:** 21 November, 2022, **Manuscript No. R-94948; Published:** 28 November, 2022, DOI: 10.37421/2684-4559.2022.6.187

benefits and risks of different approaches. Oral antibiotics are medications that are taken by mouth to treat bacterial infections [5]. They come in the form of pills, capsules, or liquid suspensions, and are typically prescribed for a specific duration of time based on the severity and type of infection.

Conclusion

In conclusion, this retrospective cohort study showed that oral antibiotics were equally effective as IV antibiotics in treating severe infections. The cost of antibiotic therapy was significantly lower in the oral group compared to the IV group. These findings suggest that oral antibiotics can provide a more cost-effective alternative for treating severe infections, and further studies are warranted to confirm these findings and investigate the impact of antibiotic resistance on clinical outcomes. Oral antibiotics can be an effective and convenient option for treating bacterial infections, but it is important to use them appropriately and only when prescribed by a healthcare professional.

Acknowledgement

None.

Conflict of Interest

None.

References

1. Morley, Robert, Matt Rothwell, John Stephenson and Liza McIlvenny, et al.

"Complex Foot Infection Treated With Surgical Debridement and Antibiotic Loaded Calcium Sulfate—A Retrospective Cohort Study of 137 Cases." *J Foot Ankle Surg* 61 (2022): 239-247.

2. Szabo, B. Gergely, B. Kadar, K. Szidonia Lenart and B. Dezsényi, et al. "Use of intravenous tigecycline in patients with severe *Clostridium difficile* infection: a retrospective observational cohort study." *Clin Microbiol Infect* 22 (2016): 990-995.
3. De Korte, N., Ç. Ünlü, M. A. Boermeester and M. A. Cuesta, B. C. Vrouenreets, et al. "Use of antibiotics in uncomplicated diverticulitis." *Br J Surg* 98 (2011): 761-767.
4. Keren, Ron, Samir S. Shah, Rajendu Srivastava and Shawn Rangel, et al. "Comparative effectiveness of intravenous vs oral antibiotics for postdischarge treatment of acute osteomyelitis in children." *JAMA pediatr* 169 (2015): 120-128.
5. Matthews, Philippa C., Lucinda K. Barrett, Stephanie Warren and Nicole Stoesser, et al. "Oral fosfomycin for treatment of urinary tract infection: A retrospective cohort study." *BMC Infect Dis* 16 (2016): 1-11.

How to cite this article: Maertens, Johan. "Effectiveness and Cost Comparison of Oral and Intravenous Antibiotics for Treating Severe Infections: A Retrospective Cohort Study." *Clin Infect Dis* 6 (2022): 187.