



Editorial

Antibiotic resistance and adherence to clinical guidelines in the Emergency Department. Are we doing it right?

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Resistencia antibiótica y adherencia a las guías clínicas en el servicio de urgencias. ¿Lo estamos haciendo bien?

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The Emergency Department (ED) is a critical point of care in the healthcare system, where timely and effective treatment decisions are paramount. Among the various clinical decisions made in the ED, the prescription of antibiotics is particularly consequential. In fact, it is estimated that 15% of patients treated receive antimicrobial treatment, most of which is empirical [1].

Antibiotic guidelines serve as a framework for clinicians in the ED to make informed decisions regarding the selection, dosage, and duration of antibiotic therapy. These guidelines are developed through rigorous research and clinical trials, ensuring that they reflect the most current and effective practices. They aim to standardize care by providing a consistent approach to antibiotic prescribing, helping reduce

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variability in treatment, and ensuring that all patients receive the best possible care based on the latest evidence. Adherence to guidelines has been shown to improve patient outcomes by ensuring that the chosen antibiotics are effective against the suspected pathogens and appropriate for the clinical scenario. However, despite these benefits, it is observed that 20-50% of antibiotic prescriptions are inadequate or not necessary [2]. Some authors suggest that the reasons for inappropriate prescriptions of antibiotics determined by studies conducted internationally are the degree of severity of the illness and the treating physician [3].

Inappropriate antibiotic use in the ED can lead to numerous complications, including adverse drug reactions, prolonged hospital stays, and increased healthcare costs. Some studies suggested that 12% of hospital costs could be diminished if antibiotic prescription was appropriate [4]. Antibiotic guidelines help mitigate these risks by ensuring appropriate use by recommending the most effective antibiotics for specific infections, thereby avoiding the use of broad-spectrum antibiotics when not necessary and reducing the risk of side effects and other complications. Guidelines provide clear recommendations on the optimal dosage and duration of antibiotic therapy, which is crucial in preventing under-treatment or over-treatment, ensuring that infections are fully resolved while minimizing the risk of toxicity and resistance. For critically ill patients, initial broad-spectrum coverage may be necessary. However, guidelines emphasize the importance of de-escalating to narrower-spectrum antibiotics as soon as culture results are available, reducing the risk of complications associated with broad-spectrum antibiotic use [5].

Antibiotic resistance is a global health crisis, with the potential to render many current treatments ineffective. The overuse and misuse of antibiotics in the ED contribute significantly to this problem. Antibiotic guidelines are a key tool in the fight against resistance by promoting judicious use, helping clinicians identify cases where antibiotics are not necessary, such as viral infections, thereby reducing unnecessary antibiotic exposure. They encourage narrow-spectrum use by recommending narrow-spectrum antibiotics when appropriate, preserving the efficacy of broad-spectrum antibiotics for more severe or resistant infections. Guidelines are integral to antibiotic stewardship programs, which aim to monitor and improve antibiotic prescribing practices, relying on guidelines to set benchmarks and educate clinicians about the best practices for antibiotic use [6].

Several studies have demonstrated the effectiveness of antibiotic guidelines in improving patient outcomes and

reducing antibiotic resistance. For instance, a study conducted in a tertiary care hospital showed that adherence to antibiotic guidelines in the ED significantly reduced the incidence of *Clostridioides difficile* infections [7]. Another study highlighted that implementing guidelines for the treatment of community-acquired pneumonia in the ED led to a decrease in the use of broad-spectrum antibiotics without compromising patient outcomes [8]. Furthermore, a systematic review of antibiotic stewardship interventions in the ED found that guideline implementation was associated with a reduction in inappropriate antibiotic prescribing, fewer adverse drug events, and a decline in antibiotic resistance rates [9].

Antibiotic guidelines are essential tools in the emergency department, providing a roadmap for clinicians to make informed and effective treatment decisions. By standardizing care, improving patient outcomes, and reducing complications, these guidelines ensure the optimal use of antibiotics. Moreover, they are a cornerstone in the global effort to combat antibiotic resistance, promoting the judicious use of antibiotics and supporting stewardship initiatives. As antibiotic resistance continues to pose a significant threat, the importance of adhering to and continually updating antibiotic guidelines cannot be overstated. Through concerted efforts, we can ensure that antibiotics remain a powerful tool in the fight against infections, safeguarding both current and future generations.

1. CONFLICT OF INTERESTS

The authors have no conflict of interest to declare. The authors declared that this study has received no financial support.

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