

Letter to Editor

India's First Indigenously Developed Antibiotic, Nafithromycin, Aims to Combat Antimicrobial Resistance

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Stand first

India's groundbreaking antibiotic, Nafithromycin, marks a significant milestone in the fight against antimicrobial resistance. Developed indigenously, it offers a potent solution to drug-resistant infections. This innovative therapy not only showcases India's pharmaceutical advancements but also provides a critical tool in addressing global health challenges posed by resistant pathogens.

In a major breakthrough for the pharmaceutical industry, India launched its first indigenously developed antibiotic, Nafithromycin (marketed as Miqnaf®). Developed by Wockhardt, in collaboration with the Biotechnology Industry Research Assistance Council (BIRAC), Nafithromycin represents a critical step in the global fight against antimicrobial resistance (AMR). The antibiotic is specifically designed to address the growing threat of community-acquired bacterial pneumonia (CABP), a life-threatening infection exacerbated by drug-resistant bacteria [1].

AMR has emerged as one of the most pressing health threats globally, causing an estimated 39 million deaths by 2050, with drug-resistant pneumonia accounting for millions of deaths annually. India, which bears a significant portion of the global burden of pneumonia, suffers from alarming resistance rates to critical antibiotics, including a marked decline in the efficacy of drugs such as imipenem. This has led to severe challenges in treating infections such as CABP,

which claims over two million lives each year worldwide [2-4].

Nafithromycin offers a potential solution. The drug is ten times more potent than azithromycin, a commonly used antibiotic, and presents a three-day regimen for treating CABP, enhancing patient adherence and reducing the duration of therapy. The macrolide mechanism of action of this novel antibiotic, which inhibits bacterial protein synthesis by binding to the 23S rRNA in the 50S ribosome subunit, effectively targets both gram-positive and certain gram-negative bacteria, making it an essential tool for combating respiratory, skin, and sexually transmitted infections [1, 2].

Dr. Jitendra Singh, Union Minister for Science and Technology, hailed Nafithromycin's launch as a game changer in the global fight against AMR. With India contributing 23% of the global pneumonia burden, this drug is expected to play a pivotal role in reducing mortality rates associated with CABP, which can reach as high as 47% in severe cases [1].

Nafithromycin's development journey spans 14 years and involves an investment of ₹500 crores, with clinical trials conducted in the U.S., Europe, and India. The final approval of the drug by the Central Drugs Standard Control Organization (CDSCO) on January 2, 2025, marked a milestone in the treatment of CABP in adults. The launch of Nafithromycin not only addresses the urgent need for effective treatments but also demonstrates India's growing

leadership in pharmaceutical innovation and public-private collaboration in healthcare [1].

With global antibiotic consumption expected to increase by 16.3% between 2016 and 2023, the introduction of Nafithromycin is a timely reminder of the need for continued research and investment in novel antimicrobial agents. This innovation sets a promising precedent for the development of future treatments for multidrug-resistant infections, offering hope for millions of patients worldwide [2-4].

Abbreviation

AMR: Antimicrobial Resistance; CABP: Community-acquired bacterial pneumonia; E. coli: Escherichia coli; rRNA: Ribosomal ribonucleic acid.

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Conflict of interest

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Ethics Approval and Consent to Participate

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Declaration of Generative AI

This manuscript has utilized OpenAI's ChatGPT (version 4) to enhance the clarity and coherence of the language. The tool was employed exclusively for language improvement purposes with ethical and academic standards. The authors take full responsibility for the content and integrity of the manuscript.

References

1. Press Information Bureau. Press release: Antimicrobial resistance awareness in India. <https://pib.gov.in/PressReleasePage.aspx?PRID=2075174> (accessed January 2025).
2. Kohanski, M. A., Dwyer, D. J. & Collins, J. J. How antibiotics kill bacteria: from targets to networks. *Nat. Rev. Microbiol.* 8, 423–435 (2010). <https://doi.org/10.1038/nrmicro2333>
3. Institute for Health Metrics and Evaluation. Antimicrobial resistance poses threat to all 35 countries in the Americas. <https://www.healthdata.org/news-events/newsroom/news-releases/antimicrobial-resistance-poses-threat-all-35-countries-americas?utm> (accessed January 2025).
4. Institute for Health Metrics and Evaluation. *Lancet*: More than 3.9 million deaths from antibiotic-resistant infections. <https://www.healthdata.org/news-events/newsroom/news-releases/lancet-more-39-million-deaths-antibiotic-resistant-infections?utm> (accessed January 2025).