



Short Communication

The indiscriminate use of azithromycin during COVID-19 era: A potential driver for antimicrobial resistance

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Behind every pandemic, a hidden pandemic lies ... !

Every aspect of life has been impacted since the outbreak of COVID-19. In the early stages of the pandemic, there was lots of ambiguity about the disease pathology and coinfection that might develop in the patients. Such uncertainty is boosted by urgency when treating patients with severe infections whose lives are at stake. This uncertainty has negatively impacted the prescribing pattern of several drugs, including antibiotics [1].

Azithromycin, a macrolide antibiotic approved for the management of certain bacterial infections, including but not limited to respiratory tract infections (RTIs) and community-acquired pneumonia (CAP), has been proposed as a potential therapy for COVID-19. This is owing to its immunomodulatory and antiviral activities, which have been of great interest in the management of viral infections, including COVID-19. However, there was no clear evidence for the efficacy of this therapy. However, there was some concern about the potential adverse drug reaction (ADR) that could occur if it was misused, particularly when combined with hydroxychloroquine [2].

Several clinical trials have been conducted to evaluate the efficacy and safety of this therapy [3,4]. Surprisingly, all clinical trials have concluded that its use is not recommended in mild-to-moderate cases. It can be useful in severe cases where coinfection is a concern. The RECOVERY trials, one of the largest randomized clinical trials (RCT) conducted to study the efficacy of azithromycin use in COVID-19 patients, has concluded that no difference is seen in the mortality or the duration of hospitalization between patients receiving azithromycin and those

receiving usual care alone. In fact, the azithromycin group was found to have a poorer outcome [4].

Major international guidelines like WHO, NIH, and IDSA strongly recommend against and discourage the use of azithromycin in combination with hydroxychloroquine due to a lack of evidence in favor and concerns over potential adverse effects. The same holds true for azithromycin alone [5].

Despite all the guidelines and recommendations against azithromycin use, it is still widely prescribed on a regular basis for COVID-19 patients in a few countries. This indiscriminate and irrational use creates a potential threat to the development of resistance to this important antibiotic. This issue is of great concern in low-and-middle-income countries (LMICs), where there is a lack of awareness about this global threat. Taking India as a case, there is wide use of azithromycin for mild cases with symptoms that resemble those of COVID-19. However, these cases could just be a common cold. Although this drug is not recommended in the national (ICMR or AIIMS New Delhi) COVID treatment guidelines, it is recommended for the treatment of mild COVID-19 patients under home isolation in the treatment guidelines of a few states, such as Uttar Pradesh and Madhya Pradesh, where a spike in the number of cases is seen. Apart from this, it is being prescribed on an outpatient basis, making its misuse highly possible [6–8].

In conclusion, existing data does not support the use of azithromycin to improve any relevant clinical parameter in COVID-19, such as recovery time or hospitalization need. Its injudicious usage by primary care practitioners and patients should be ceased, and it should be

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removed from official guidelines. Otherwise, the irrational use of this important antibiotic will result in resistance and pose a real challenge in the treatment of infections for which azithromycin is now indicated and effective.

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All authors contributed equally in drafting the manuscript.

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Guarantor

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Consent

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Declaration of competing interest

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