Impact of COVID-19 pandemic on the pattern of Antibiotic prescribing; The case of Azithromycin

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Abstract

Objective: COVID-19 infection and its persistence globally during (2020-2023) entailed several modifications in healthcare services, including antibiotic prescriptions. The aim is to highlight changing trends in azithromycin prescribing during pandemic years. **Methods**: PubMed database was systematically searched for combinations of : Antibiotics; Antimicrobial resistance; Azithromycin; COVID-19. **Results**: 12 articles were included. There was a notable increase in azithromycin consumption in Spain, Brazil, USA, India, Croatia, and Jordan. Healthcare systems worldwide should be prepared to address anticipated outcomes of increased azithromycin use particularly a possible growing azithromycin resistance, and potential side effects.

Methods

A literature search was conducted in MEDLINE/PubMed using the combinations of "COVID-19" and the following keywords: "Antibiotics", "Antimicrobial resistance", and "azithromycin". SARS-CoV-2 English literature published from December 2019 until March 31, 2022 were included.

Introduction

Azithromycin has been recommended and used heavily by many authorities during COVID-19 pandemic because of its ability to counteract secondary bacterial infections in medically compromised COVID-19 patients. Although some authorities describe this drug as potentially effective in combating SARS-CoV-2 due to its antiviral and immunomodulatory effects, its effectiveness in the management of COVID-19 is still debatable and a number of side effects have been identified including gastrointestinal disturbances, ototoxicity, and injection site complications, bacterial resistance and proarrythmic events.

Results

A total of 12 articles from six countries (USA, India, Croatia, Spain, Brazil and Jordan in the form of retrospective studies estimated an increased consumption of Azithromycin compared to the pre-COVID era.
Although search period was up to March, 2022, all included studies focused on the year 2020 and compared the number of prescriptions to the previous years 2018-2019. Most studies included in the review originated from USA followed by Spain.

Discussion

Studies clearly highlight the trending increased consumption of azithromycin paralleled by reduction in other antibiotics which should warrant attention to the anticipated rise in the associated side effects, such as the rise in bacterial resistance including macrolides and non-macrolides. The increased consumption of azithromycin is also reflected on the relatively high cost particularly in industrialized countries. It is recommended that more studies are conducted globally to estimate the most recent trends in patterns of azithromycin use, and to evaluate any changes in the reported side effects and antimicrobial resistance. This is particularly warranted for the large non-COVID-19 patient population for whom azithromycin is indicated.

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References

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