

## Association Between Hydroxychloroquine or Azithromycin and In-Hospital Mortality



As of May 2020, at least a quarter of a million people worldwide have died from COVID-19. Over the past four months, many treatments have been suggested for this disease but none have worked so far. Hydroxychloroquine has been too much in the news, in particular.

Laboratory evidence has indicated that the use of hydroxychloroquine can inhibit the activity of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and other coronavirus strains. Hence, researchers have been considering the use of hydroxychloroquine with azithromycin to manage COVID-19. Unfortunately, most clinical data on hydroxychloroquine for the treatment for COVID-19 have been marred by anecdotal cases, short term follow up, small sample size, and a heterogeneous patient population. In addition, reports indicate that hydroxychloroquine with azithromycin may cause adverse cardiac events such as QT prolongation and induce arrhythmias.

How hydroxychloroquine works against coronavirus is not known but it is believed that the drug has potent anti-inflammatory properties. However, there continues to be an ongoing debate about its effectiveness.

In a retrospective cohort study, there were 1438 hospitalised patients in 25 hospitals, representing 88.2% of patients with COVID-19 in the New York metropolitan area. 858 participants (59.7%) were male and the median age was 63 years.

The study compared patients treated with hydroxychloroquine, azithromycin, or no drug. The participating patients had been admitted for a minimum of 24 hours during the last two weeks of March 2020. The diagnosis of COVID-19 was confirmed by laboratory studies. Information about patient comorbidities and any drugs they were using at the time of the study was obtained from medical records. The primary outcome was in-hospital mortality and the secondary outcomes were changes on the ECG (QT prolongation), arrhythmias, or cardiac arrest.

51.5% of the patients received hydroxychloroquine+azithromycin, 18.8% received hydroxychloroquine alone, 14.7% received azithromycin alone and 15.4% received neither drug. Respiratory measurements during the first 24 hours showed that patients in the hydroxychloroquine+azithromycin group had more clinically severe disease than the neither drug group. 95% of the hydroxychloroquine + azithromycin group had abnormal chest imaging findings, lung infiltrate, and bronchopneumonia/pneumonia.

Patients receiving hydroxychloroquine+azithromycin had higher levels of ICU admission compared to those receiving azithromycin alone and neither drug. Overall, 56.1% of patients in all groups entered intensive care within 1 day of admission. More patients receiving hydroxychloroquine+azithromycin and hydroxychloroquine alone received mechanical ventilation compared to those taking azithromycin alone or neither drug.

Direct adjusted mortality at 21 days was 22.5% with hydroxychloroquine + azithromycin, 18.9% with hydroxychloroquine alone, 10.9% with azithromycin alone and 17.8% with neither drug. No significant difference was found between hydroxychloroquine alone and azithromycin alone.

Abnormal ECG findings were the most commonly reported adverse event and were more common in the hydroxychloroquine + azithromycin and hydroxychloroquine alone group. More patients in the hydroxychloroquine+azithromycin group experienced cardiac arrest and abnormal ECG findings as did those in the hydroxychloroquine alone group compared to azithromycin alone and neither drug.

Findings show that treatment with hydroxychloroquine, azithromycin or both compared with neither drug was not significantly associated with

differences in in-hospital mortality.

Source: [JAMA](#)

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