

The impact of hydroxychloroquine and azithromycin on the corrected qt interval in patients with the novel coronavirus disease 2019

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Background: Although long-term use of HCQ and AZT has been reported to cause QT prolongation and malign arrhythmia, there is not enough data about the effect of short-term use on arrhythmia. Purpose: The aim of this study was to assess the effect of HCQ alone and HCQ + AZT on corrected QT (QTc). Methods: A baseline ECG and on-treatment ECGs were retrospectively collected in COVID-19 patients who received HCQ and/or AZT. Also peak QTc intervals of monotherapy and combination therapy was compared. Results: Of the 155 patients included, 102 (65.8%) were using HCQ, 53 (34.2%) were using HCQ + AZT combination. The use of both HCQ alone and HCQ + AZT combined therapy significantly prolonged the QTc and the QTc interval was significantly longer in patients received combination therapy. QTc prolongation caused early termination in both groups, 5 (4.9%) patients in the monotherapy group and in 6 (11.3%) patients in the combined therapy group. Conclusion: Patients who received HCQ for COVID-19 were at high risk of QTc prolongation, and concurrent treatment with AZT was associated with greater changes in QTc.

Comparison of baseline characteristics a

Characteristic	Total (n = 155)	Hydroxychloroquine (n = 102)	Hydroxychloroquine / Azithromycin (n = 53)	P value
Length of stay at ward, SD	9.54 ± 4.28	9.64 ± 4.31	9.31 ± 4.25	0.88
Length of stay Intensive care unite,SD	7.92 ± 3.76	7.18 ± 3.18	8.46 ± 4.15	0.29
Radiographic findings of pneumonia	118(76.1%)	76(74.5%)	42(49.2%)	0.32
Mechanically ventilation	16(10.3%)	7(6.9%)	9(17.0%)	0.049
In hospital death	19(12.3%)	10(9.8%)	9(17.0%)	0.15
ECG findings median(IQR) (ms)				
Baseline QRS duration	91.0(80.0-103.0)	92.5(80.75-105.50)	90.0(80.0-102.5)	0.5
Posttreatment QRS peak	97.0(86.0-109.0)	97.5(88.0-109.25)	95.0(85.5-109)	0.68
ΔQRS	4.0(0.0-9.0)	2.0(0.0-8.25)	5.0(1.0-9.5)	0.14
Baseline QTc duration	407.0(385.0-426.0)	408.0(389.25-427.50)	404.0(384.0-420.0)	0.1
Posttreatment QTc peak	437.0(414.0-460.0)	428.0(412.75-449.25)	456.0(422.0-467.5)	<0.001
ΔQTc	27.0(13.0-45.0)	18.0(11.0-30.0)	46.0(40.5-54.5)	<0.001
Baseline PR duration	145.50(128.7-160.0)	147.0(135.0-160.0)	144.0(120.0-160.0)	0.53
Posttreatment PR peak	159.0(140.0-170.0)	159.0(141.0-168.50)	156.0(139.5-171.0)	0.97
ΔPR	7.0(1.0-13.0)	5.0(0.0-12.25)	10.0(5.0-15.0)	0.022
QTc peak day	5.0(4.0-5.0)	5.0(4.0-6.0)	4.0(3.0-5.0)	0.022
Drug withdrawl due to QRS prolongation	11(7.1%)	5(4.9%)	6(11.3%)	0.12