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Letter to the Editor

# Ventricular arrhythmia risk due to chloroquine / hydroxychloroquine treatment for COVID-19: Should it be given

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The risk of arrythmia in patients with COVID 19 is high because of metabolic and pathophysiologic consequences of their illness and they are likely to have longer baseline QTc. However such high risk critically ill patients may derive highest benefit from potentially effective drugs.

*In -vitro* studies have established that Chloroquine has anti-viral properties and has some effect on SARS-CoV replication. Chloroquine through the inhibition of MAP-kinase interferes with SARS-CoV-2 molecular crosstalk, alters the virion assembly, budding and interfears with the proteolytic processing of the M protein and interfere with ACE2 receptor glycosylation thus prevents SARS-CoV-2 attachment to the target cells. In a study from china, chloroquine was highly effective *in-vitro* in reducing viral replication at standard dosing as it concentrates in lung.[1] There have been few small studies in human showing positive results in COVID 19.[2] Currently many national and international bodies/organizations are recommending them for treatment and prophylaxis and at the same time concerns are being raised about their safety and doubtful attitude towards the usage.

Chloroquine and hydroxychloroquine both prolong QT interval by inhibition of iKr and thus a potential risk of arrhythmic death. A number of factors are known to contribute to increased risk of drug-induced TdP including electrolyte disturbances, female sex, hepatic/renal failure, structural heart disease, congenital long-QT syndromes, and concomitant QT prolonging medications. Close monitoring and optimization of these factors may reduce the risk. A risk score has been derived and validated by Tisdale et al[3] for prediction of drug-associated QT prolongation among cardiac-care-unit-hospitalized patients. This score may be used to risk stratify the patients. However a simple algorithm based on current opinions for initiating the drugs in such patients is presented in Fig. 1.

In these patients QTc screening should be done to identify patients who are at increased risk for TdP so that preventive measures may be implemented and not to exclude them potential benefits. The concerns regarding mortality risk is real but following should be kept in mind while deciding against the chloroquine/hydroxychloroquine therapy. It is one of the most frequently used drugs in the globe, without reports of arrhythmic death under World Health Organization surveillance.[4] Furthermore the duration of use for COVID 19 is typically very short and there is large potential of individual and population benefit.

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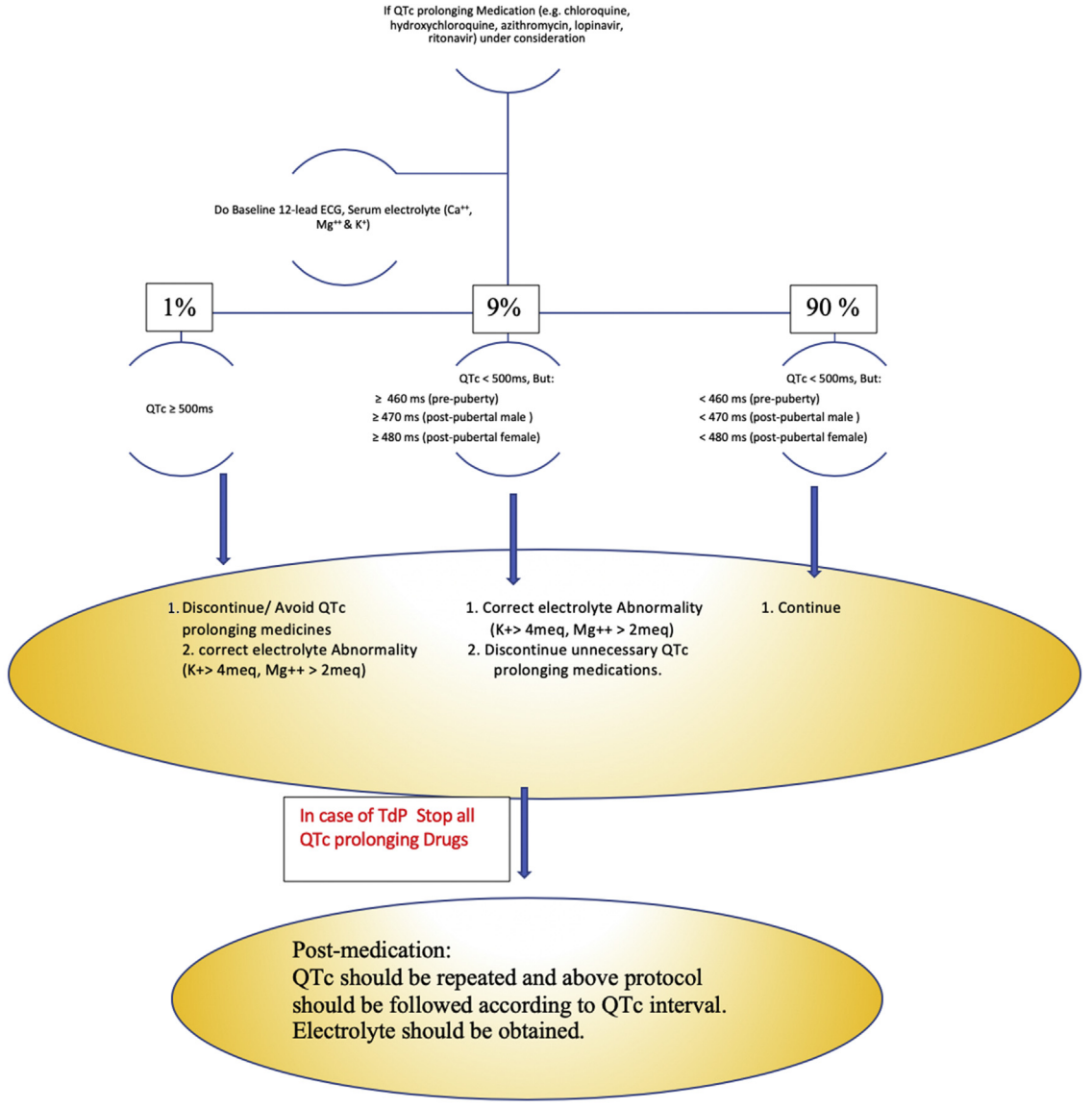


**Fig. 1.** The suggested pathway of initiating QT prolonging drugs in COVID -19.

## Conflict of interest

None, no relationship to industry.

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Amit Malviya
*Department of Cardiology,North Eastern Indira Gandhi Regional Institute of Health and Medical Sciences, Mawdiangdiang, Shillong, Meghalaya, India*
*E-mail address:* dramit_malviya@rediffmail.com.



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