



# Determining the risk of attack with HCQ COVID-19 treatment in people with epilepsy and neurological issues

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## Abstract

**Background:** The purpose of this systematic review is to evaluate published literature on the risk of CQ or HCQ treatment in people with epilepsy. In the COVID-19 pandemic, treatment is required against the SARS CoV-2 virus. CQ or HCQ are the proposed drugs that attract the attention of the public. However, the packaging indicates that these medications can relieve patients with epilepsy, and as a result, there are growing concerns in the epilepsy community.

**Methods:** PubMed (1970 to March 27, 2020) and Embase (1970 to March 27, 2020) were CQ or HCQ names and searched for numbness or convulsions. Selected studies were reviewed and drug reactions were bad.

**Results:** Of the 31 studies, only 11 were considered in favor of systematic analysis. With CQ, subjects are worth a prospective case study (n = 109), two case series (n = 6) and six issue reports. After taking 1000 mg, excluding an epileptic patient, the efficacy of CQ varies between 100-500 mg per day. For HCQ, there is a case study (n = 631) and a case report. Clinical trials have failed to identify any significant association between seizures and CQ or HCQ.

**Conclusions:** Despite the increased risk of seizures from packaging, a systematic review highlights that Class 1 evidence does not support such statements. Therefore, practitioners should understand that information on this particular topic is limited to most cases and case reports. There is little evidence to suggest that these drugs increase the risk of epilepsy.

**Keywords :** Chloroquine, Hydroxychloroquine, COVID-19, Epilepsy, Neurological issues

## 1. Introduction

With the global outbreak of coronavirus disease (COVID-19), the laboratory-blast case has confirmed 227,368 deaths since April 29, 2020 (WHO, 2020). A significant proportion of patients need medical care, while others require specialized care management of the intensive care complex for health care planning. Due to the acute shortage of ventilators and personal protective equipment, the anti-virus SARS CoV-2 - COVID-19 pathogen (Fauci et al., 2020) is urgently needed. Of the various drugs tested, there are two antimalarial drugs, CQ and HCQ, which have attracted much attention due to small studies and positive results from news coverage (Cartesiani et al., 2020; Hu et al., 2020). CQ (4-amino quinolone) is prescribed for the treatment of malaria and chemoprophylaxis, while HCQ is used to treat inflammatory conditions such as lupus. A quick search of therapeutic triasl.gov under the name CQ or HCQ for COVID-19 has produced more than 30 courses since the beginning of April 2020. While there is no great basis for success, there are many problems. Academics and clinicians have included these drugs in their therapeutics against COVID-19 (Cortegianiet al., 2020). The packaging of CQ and HCQ means that “patients with a history of epilepsy are advised to risk the risk of recombinant CQ or HCQ.

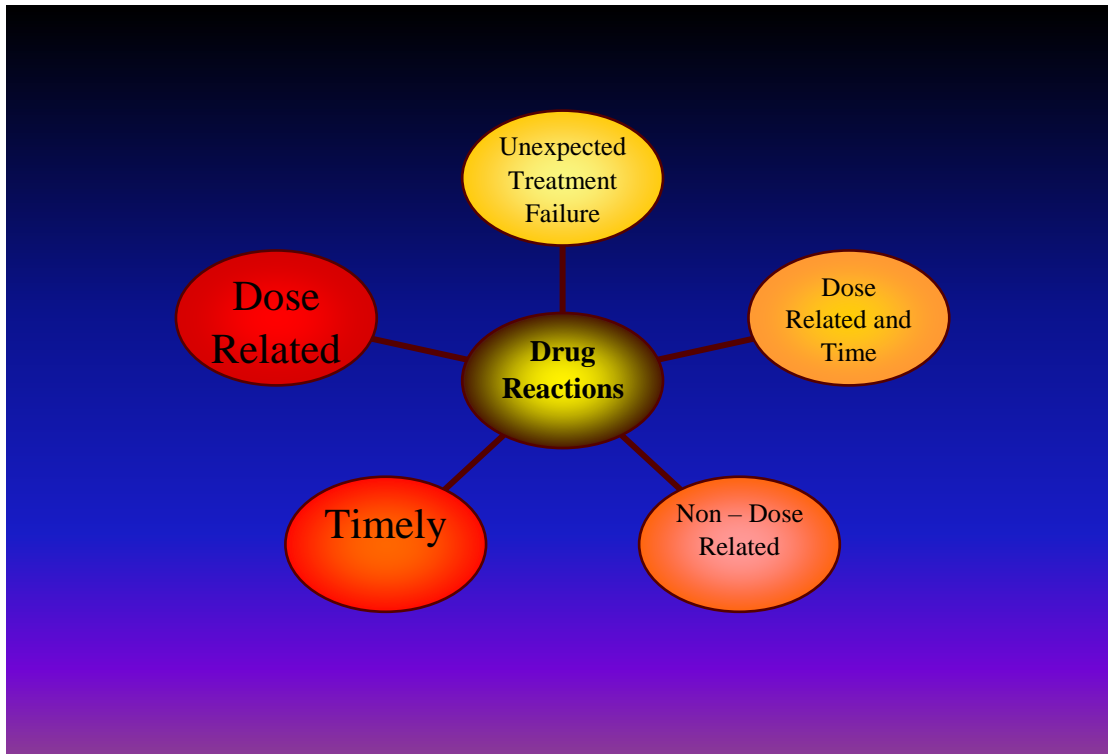
Clearly, this statement has prompted developmental questions and concerns in the epilepsy community about the safety of CQ or HCQ in people with epilepsy. Original studies have shown that CQ stimulates the body's metabolic system by inhibiting GABAergic neurotransmission (Amabiyoku, 1992). In early studies, low doses of CQ (1–5 mg / kg) prevented seizures, but high doses (10–50 mg / kg) had the effect of intensifying (Hasnipour et al., 2016). Unlike CQ, HCQ has little effect on CNS effects. The purpose of this systematic review is to evaluate the published literature demonstrating the risk of receiving CQ treatment in persons with and without epilepsy and neurological disorders.

Characteristics of nine studies (six case reports, two case series, and one clinical trial).

Type of Adverse Reaction	Type of Study, level of evidence	Patient comorbidities	Drug/dose	Reason for prescription	Seizures or status epilepticus (SE)	Country reported	References
Non dose related	Case Report, IV	49 yo, F, SLE	C, 250 mg/d X 30 d	SLE	multiple FIAS X24 hrs	Poland	2018. Krzeminski P, Lesiak A, Narbutt J. PMID: 30,206,460
Non dose related	Case Report, IV	14 yo, F, SLE	C, 500 mg/d	SLE	one BTC sz	Venezuela	2004 Tristano AG, Falcón L, Willson M, de Oca IM PMID: 14,740,170
dose related	Case Report, IV	30 yo, M, healthy	C, 1gm/d X 4 d	Ppx	one BTC sz	UK	2016 Martin AN, Tsekas D, White WJ, Rossouw D. PMID: 27,005,796
Non dose related	Case Report, IV	35 yo, M, healthy	Savarine (C 100mg + Proguanil 200 mg) -2 doses	Ppx	one BTC sz	France	2000. Schiemann R, Coulaud JP, Bouchaud O. PMID: 11179947.
Non dose related	Case Series, IV	40 yo M, healthy	Maloprim (C 400mg + Dapsone 100 mg + Pyrimthimine 12.5 mg) 1 tab/wk X 4 wks	Ppx	two BTC sz	UK	1988, Fish DR, Espir ML. PMID: 3,139,186
		26 yo F, generalized epilepsy	Maloprim (C 400mg + Dapsone 100 mg + Pyrimthimine 12.5 mg) 1 tab/wk X 3 wks	Ppx	one BTC sz	UK	
		49 yo F, focal epilepsy	C 400 mg /d X 1 d	Ppx	prolonged BTC sz	UK	
Non dose related	Case report, IV	42 yo, M, Leprosy	C 450 mg/d x 8 d	ENL (Leprosy)	two BTC szs	Nigeria	1998 Ebenso BE. PMID: 9,715,604
Non dose related	Prospective study during therapeutic clinical trial, II	N = 109; 9 mo-13y, cerebral malaria	dose unknown, study correlated seizure with serum level of C and a metabolite	Ppx	54 % szs, 9% SE	Kenya	2000. Crawley J, Kokwaro G, Ouma D, Watkins W, Marsh K. PMID: 11,169,275
Non dose related	Case Series, IV	28 yo, F, SLE	C 200 mg/d X 180d	SLE	one BTC sz	Netherlands	1992. Luijckx GJ, De Krom MC, Takx-Kohlen BC. PMID: 1,344,765
		21, yo, M, healthy	C 300 mg /week X 2mo	Ppx	two BTC sz		
		23 yo, M, h/o one sz	C 300 mg /week X 2mo	Ppx	one BTC sz		
Non dose related	Case Report, IV	69 = 8 yo, F, healthy	C 100 mg/d X 12 d	Ppx	NCSE	Switzerland	1995. Mülhauser P, Allemann Y, Regamey C. PMID: 7,762,925
Non dose related	Case Report, IV	17, yo, F, h/o focal epilepsy	SLE, HC 200 mg/d X 14 d	SLE	First onset prior h/o only.	Italy	2000 Malcangi G, Fraticelli P, Palmieri C, Cappelli M, Danieli MG. PMID: 11,149,659
Not applicable	Prospective observational study, II	N = 600 adults with newly diagnosed lupus and no prior h/o seizure	HC- specific dose not mentioned in the study	SLE	6.7 % (40) participants had a seizure after the diagnosis of SLE. Seizure details not mentioned in the manuscript	USA	2008. Andrade RM, Alarcon GS, Gonzalez LA et al. PMID: 17,875,548

## 1. METHODS

This study was conducted in accordance with the recommendations Of the Popular Reporting Items for Systematic Reviews and Metaanalyses (PRISMA) reporting guidelines. PubMed (1970 to March 27, 2020) and Embase (1970 to March 27, 2020) are also searched vaccines CQ or HCQ arrest, epilepsy, failure, or epilepticus of the condition. Only adjectives and books are published in English they were reviewed. Input methods were not readable or not series, and clinical trials that report the seizure or pain state with CQ or HCQ. The extraction methods were widely used or toxins from CQ, animal studies, and cardiac reports neuropsychiatric adverse effects. The information extracted from the reports was correct -age, sex of the study population, dosage of medicines when available, and reported comorbidities. We have updated the reported dosage to ensure that side effects were related to the overdose. The level of evidence was measured between I-IV (Armstrong and Gronseth, 2018). The different drug reaction of interest is swim or epilepticus of the condition. For each selected subject, the authors reviewed everything labeled and classified adverse drug reactions such as - a) dose related b) non-dose related, c) dose-related and time-related; d) timely, e) withdrawal or f) unexpected treatment failure (Edward and Aronson, 2000).



## 2. RESULTS

Only 11 of the 31 subjects were considered to be well-organized to refresh. Experimental studies or reports of CQ or HCQ toxicity, cardiovascular and neuropsychiatric problems they are excluded. With CQ, appropriate studies were expected researched (n = 109), two case series (n = 6), and six case reports. For HCQ, there was only one research study (n = 631) and single-case reports (Table 1)

### 3.1 THREAT TO HEALTHY BEINGS

#### 3.1.1 HYDOXY-CQ

Featured data revealed five healthy adults (all case reports and series) he became very excited after taking CQ for primary prophylaxis against malaria. One of them had difficulty speaking the second in the uncompressed state of epilepticus. The volume goes down the middle 100 mg-400 mg per day except for one person who had seizures after ingestion of 1 gm CQ prescribed by a nonprofessional provider. For one person, EEG revealed the norm spike-wave epileptiform discharge, thus suggesting a baseline an undiagnosed epilepsy.

### 3.2 THREAT TO BEINGS WITHOUT NEUROLOGICAL DIORDERS

#### 3.2.1 CQ AND HCQ

Four adults (all case reports and series) were caught in the frustration after taking CQ to treat leprosy or a lupus specialist. Capacity range between 200 –500 mg / day. Two articles in a series of cases had them Multiple laboratory investigations, including CSF analysis, and EEG failed to identify another etiology.

A mid-level pilot study that will use multiple centers of the seizure time of newly diagnosed patients Lupus (N = 600) confirmed a long risk-taking latency with the use of HCQ thus suggests that the drug it can protect against the development of cardiac arrest. The texture was there 6.7% (40) of the participants.

### 2.3 THREAT TO BEINGS WITH NEUROLOGICAL DIORDERS

To investigate the relationship between CQ blood levels (used as prophylaxis), its metabolite desethyl CQ, and absorption in children (N = 109, 9 months - 13 years) with cerebral malaria, the investigators seized the opportunity for blind-sighted control the case in which an intramuscular phenobarbital (20 mg / kg) or placebo was present provided to prevent arrest. 54% (59 of 109) of children were arrested following malaria There was no association between seizures blood levels of CQ or desethyl CQ (Crawley et al., 2000). Three case studies have documented the attack following CQ prophylaxis (300–400 mg / day) in people with epilepsy

A young woman with a history of concentrated attention and lupus had a tonic-clonic is held for the first time in two weeks HCQ treatments 200 mg / day (5 mg / kg). Fighting vaccines were unchanged, and laboratory investigations were dismissed a significant increase in lupus. Following the separation of HCQ, had no more seizures of tonic fatigue during the follow-up period even though the focus capture continues.

HCQ may have undesirable effects on the central nervous system. These adverse effects usually occur with high doses of medications (> 6 mg / bodyweight / day) or in the presence of adverse effects (pharmacokinetic interactions, personal and family history, HCQ-related disease).(CIRO MANZO et al 2017)

### 3. Discussion and Conclusion

Both chloroquine and HCQ are used more ten chemoprophylaxis resistant to malaria and treating lupus. Even packaging means a higher risk of getting caught a systematic review emphasizes that such a statement is not supported any class I read but with anecdotal case reports and case series. Two clinical trials failed to show significant risk of constipation with these drugs. The purpose of this review was not to test whether chloroquine or HCQ effective remedy against COVID-19. Health trials are ongoing, and many centers also offer the drug by clinical trial or as off-label therapy. Yes, the latest The observational study failed to find the benefit of HCQ against COVID-19 (Geleris et al., 2020). Most of us have epilepsy patients live in a group home or institution and are at risk and SARS CoV-2 contract. Evidence examines the interdependence Chloroquine or HCQ and seizures are not enough to suggest great communication. Therefore, doctors must understand that data concerning this particular topic is limited to a series of cases and cases reports. There is no substantial evidence to suggest that these drugs may increase the risk of arrest.

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