St. Francis Hospital, The Heart Center®
Catholic Health Services
At the heart of health

TITLE OF RESEARCH STUDY: A Randomized Study Evaluating the Safety and Efficacy of Hydroxychloroquine and Zinc in Combination with Either Azithromycin or Doxycycline for the Treatment of COVID-19 in the Outpatient Setting

PI: Avni Thakore, MD

Co-Investigators: Joseph Levine, MD, Stefan Muehlbauer, MD, PhD, James Nguyen, MD

Purpose: The trial will look at the safety and efficacy of a combination treatment regimen for COVID-19. The combination includes hydroxychloroquine and zinc with either azithromycin or doxycycline.

Eligibility Criteria

Inclusion

- High initial clinical suspicion by physician based on signs and symptoms (fever, cough, myalgias, fatigue, shortness of breath) followed by RT-PCR for confirmation of COVID-19 diagnosis
- Any gender
- Age 60 years and older
- Age 30-59 years with one or more of the following:
    - abnormal lung exam
    - abnormal oxygen saturation <95%
    - abnormal CXR or chest CT
    - persistent fever >100.4 degrees Fahrenheit upon arrival to ED
    - one of the following co-morbidities: hypertension, diabetes mellitus, history of coronary artery disease, chronic kidney disease (CKD), asthma, COPD, current or former smoker, or morbid obesity (BMI ≥35)

Exclusion

- Pregnant or breastfeeding female
- Severe COVID-19 requiring admission for inpatient treatment
- Need for any oxygen supplementation
- Need for mechanical ventilatory support
- History of oxygen supplementation dependency
- History of cancer with ongoing chemotherapy or radiation therapy
- Concurrent antimicrobial therapy
- Known hypersensitivity to hydroxychloroquine or other 4-aminoquinoline compounds
- Already taking hydroxychloroquine or chloroquine within 1 month
- Known G6-PD deficiency
- History of retinopathy

- History of current cardiac diseases (heart failure, ventricular arrhythmias, Left bundle branch block and/or Right bundle branch block, QTc prolongation >480ms), or family history of sudden cardiac death
- Ongoing use of drugs that prolong the QTc interval (antipsychotics, antidepressants, class I and III antiarrhythmic, triptans)
- Severe renal disease: GFR <30ml/min
- Severe hepatic impairment (elevated total bilirubin >2 mg/dL, decreased albumin <2.8 g/dL, signs of jaundice and ascites.)
- Active alcohol abuse (>5 drinks per day or >20 drinks per week.)
- Seizure disorder, currently on medications
- Known hypersensitivity to any tetracycline's.

Initial target patients for this trial, are those who are discharged from St. Francis Hospital emergency department, as well as those patients who are cared for in the outpatient primary care practices in our hospital system. These patients should be newly symptomatic, or have a pending or positive COVID-19 test within the past 48 hours.

All patients will be administered hydroxychloroquine and zinc, and will be randomized 1:1 to either receive azithromycin or doxycycline. Participants will receive follow-up phone calls based on a defined timeline to evaluate their symptoms and any adverse events related to the study medication regimen post randomization. They will also be given a KardiaMobile6L device to measure their corrected QT (QTc) interval, which will be evaluated each day by a physician.

Our endpoints are, time to resolution of symptoms, hospitalizations, intubations, as well as the safety of the drug regimen. In addition to the primary study, we will compare our results to a historical control arm matched by age, gender and co-morbidities. We will also be monitoring for adverse events related to the study medication including but not limited to potential arrhythmic complications.

Participants will review informed consent and if agreeable to participate will be randomized into one of two arms and will subsequently be provided with the study medications of the randomization assignment and the KardiaMobile6L device.

We estimate the study will take 4-6 months to complete.