Published Data – Retrospective Analysis

Retrospective Analysis of Hydroxychloroquine in 84 Hospitalized Patients with COVID-19 (France)

Retrospective Analysis of Hydroxychloroquine in 84 Hospitalized Patients with COVID-19


**Study Design**

- **Background**: Retrospective observational data on effectiveness of hydroxychloroquine in hospitalized patients compared with controls in 4 French hospitals during March 17-31, 2020.

- **Primary Outcome**: Survival without transfer to the intensive care unit at day 21.

- **Inclusion Criteria**
  - Age 18 to 80 years of age
  - PCR confirmed SARS-CoV-2
  - Required oxygen (by nasal cannula or face mask at admission), but not intensive care

- **Exclusion Criteria**
  - Contraindication to hydroxychloroquine at 600 mg daily dose
  - Start of hydroxychloroquine prior to hospitalization
  - Treatment with another experimental drug within 48 hours of admission
  - Direct admission to the ICU or continuous care unit
  - ARDS at admission
  - Discharge from ICU to standard care at study entry
  - Decision to limit or stop active therapeutics at admission
Retrospective Analysis of Hydroxychloroquine in 84 Hospitalized Patients with COVID-19: Study Arms

Arms and Interventions

- Hydroxychloroquine 600mg daily dose started within 48 hours of admission* (n = 84)

  or

- Hydroxychloroquine NOT started within 48 hours of admission^ (n = 89)

* 17 of 84 (20%) patients in the HCQ group also received azithromycin and 64 (76%) received concomitant amoxicillin-clavulanic acid. ^8 patients in the hydroxychloroquine not started group received HCQ later in their admission.

Retrospective Analysis of Hydroxychloroquine in 84 Hospitalized Patients with COVID-19

• To control for confounding and balance differences in baseline variables between groups authors used a propensity score approach

• The propensity score model included:
  - Age
  - Gender
  - Comorbidities
  - Body mass index (BMI) ≥ 30 kg/m²
  - 3rd trimester of pregnancy
  - Treatment with ACEi or ARB
  - Time since symptom onset
  - Severity of disease at presentation

Retrospective Analysis of Hydroxychloroquine in 84 Hospitalized Patients with COVID-19: Baseline Characteristics

<table>
<thead>
<tr>
<th>Baseline Characteristics</th>
<th>Hydroxychloroquine (n = 84)</th>
<th>No Hydroxychloroquine (n = 89)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, years - median [IQR]</td>
<td>59 [48 − 67]</td>
<td>62 [54 − 69]</td>
</tr>
<tr>
<td>Male – n (%)</td>
<td>65 (77)</td>
<td>60 (67)</td>
</tr>
<tr>
<td>Comorbidities – n (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic Respiratory disease</td>
<td>5 (6)</td>
<td>14 (16)</td>
</tr>
<tr>
<td>Cardiovascular disease</td>
<td>38 (45)</td>
<td>51 (57)</td>
</tr>
<tr>
<td>Insulin-dependent diabetes</td>
<td>4 (5)</td>
<td>11 (12)</td>
</tr>
<tr>
<td>Immunosuppression</td>
<td>8 (10)</td>
<td>12 (14)</td>
</tr>
</tbody>
</table>

*Abbreviations: IQR = interquartile range

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<tr>
<td>Markers of Disease Severity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confusion – n (%)</td>
<td>0 (0.0)</td>
<td>6 (7)</td>
</tr>
<tr>
<td>Lymphocyte count &lt;500/mm³ – no (%)</td>
<td>6 (7)</td>
<td>10 (11)</td>
</tr>
<tr>
<td>Greater than 50% of lung affected on CT scan – n (%)</td>
<td>14 (22)</td>
<td>8 (11)</td>
</tr>
</tbody>
</table>

*Abbreviations: IQR = interquartile range; CT = computed tomography

Retrospective Analysis of Hydroxychloroquine in 84 Hospitalized Patients with COVID-19: Baseline Characteristics

Retrospective Analysis of Hydroxychloroquine in 84 Hospitalized Patients with COVID-19: Results

- There were no significant differences between groups in relative risk of:
  - Transfer to ICU or death within 7 days
  - All cause mortality within 7 days
  - Development of ARDS

- Of the 84 patients who received hydroxychloroquine at admission, 8 (9.5%) developed an ECG change requiring discontinuation of hydroxychloroquine
  - 7 experienced QT prolongation
  - 1 developed 1st degree AV block

- 1 of the 8 patients in the no initial hydroxychloroquine group who subsequently received hydroxychloroquine developed left bundle branch block

*ARDS= acute respiratory distress syndrome; ECG = electrocardiogram

Conclusions: “Hydroxychloroquine has received worldwide attention as a potential treatment for covid-19 because of positive results from small studies. However, the results of this study do not support its use in patients admitted to hospital with covid-19 who require oxygen.”