Published Data – Open-Label, Randomized, Controlled Trial

Hydroxychloroquine in 75 Patients with COVID-19 (China)

Hydroxychloroquine + Standard of Care (SOC) vs. SOC Alone in Hospitalized Patients with COVID-19: Open Label RCT

### Study Design


- **Primary Endpoint**: Conversion to a negative SARS-CoV-2 RT-PCR by 28-days

- **Secondary endpoints** (included):
  - Conversion to a negative SARS-CoV-2 RT-PCR at 4, 7, 10, 14, and 21 days
  - Improvement in clinical symptoms within 28 days
  - Change in C reactive protein and lymphocyte count within 28-days

- **Inclusion Criteria**
  - 18 years of age or older
  - SARS-CoV-2 infection confirmed by RT-PCR
  - Able to take hydroxychloroquine orally

- **Exclusion Criteria**:
  - Known allergy to hydroxychloroquine
  - Existing condition that could lead to severe adverse event with hydroxychloroquine use
  - Pregnancy and/or lactating mothers

Hydroxychloroquine + Standard of Care (SOC) vs. SOC Alone in Hospitalized Patients with COVID-19: Study Arms

**Arms and Interventions (Intention to Treat)**

Hydroxychloroquine 1,200 mg daily for 3 days, followed by 800 mg daily for 2 or 3 weeks* + standard of care 
(n = 75^)

*or*

Standard of care alone 
(n = 75+)

- Hydroxychloroquine was given for 2 weeks in patients with mild/moderate disease and for 3 weeks in patients with severe disease. Authors did not define what constituted mild/moderate versus severe disease.
- ^6 patients did not receive any doses of hydroxychloroquine
- ^1 patient received hydroxychloroquine

Hydroxychloroquine + Standard of Care (SOC) vs. SOC Alone in Hospitalized Patients with COVID-19: Baseline Characteristics

<table>
<thead>
<tr>
<th>Baseline Characteristic*</th>
<th>HCQ + SOC (n = 75)</th>
<th>SOC Alone (n = 75)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age in years – mean (SD)</strong></td>
<td>48.0 ± 14.1</td>
<td>44.1 ± 15.0</td>
</tr>
<tr>
<td><strong>Male – no. (%)</strong></td>
<td>42 (56)</td>
<td>40 (53)</td>
</tr>
<tr>
<td><strong>Days from disease onset to randomization (SD)</strong></td>
<td>16.0 ± 9.9</td>
<td>17.1 ± 11.1</td>
</tr>
<tr>
<td><strong>Medication prior to randomization – no. (%)</strong></td>
<td>47 (63)</td>
<td>43 (57)</td>
</tr>
<tr>
<td><strong>Disease severity – no. (%)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mild</td>
<td>15 (20)</td>
<td>7 (9)</td>
</tr>
<tr>
<td>Moderate</td>
<td>59 (79)</td>
<td>67 (89)</td>
</tr>
<tr>
<td>Severe</td>
<td>1 (1)</td>
<td>1 (1)</td>
</tr>
<tr>
<td><strong>Coexisting conditions – no. (%)</strong></td>
<td>28 (37.3)</td>
<td>17 (22.7)</td>
</tr>
<tr>
<td>Diabetes</td>
<td>12 (16)</td>
<td>9 (12)</td>
</tr>
<tr>
<td>Hypertension</td>
<td>6 (8)</td>
<td>3 (4)</td>
</tr>
</tbody>
</table>

Hydroxychloroquine + Standard of Care (SOC) vs. SOC Alone in Hospitalized Patients with COVID-19: Results

Comparison of Patients (%) with Negative Nasopharyngeal PCR by Day 28

Hydroxychloroquine + Standard of Care (SOC) vs. SOC Alone in Hospitalized Patients with COVID-19: Results

Median Time (Days) to Negative Nasopharyngeal PCR

Hydroxychloroquine + Standard of Care (SOC) vs. SOC Alone in Hospitalized Patients with COVID-19: Results

- Median time to conversion to a negative SARS-CoV-2 RT-PCR did not differ between those who received HCQ + SOC vs. SOC alone.
  - HCQ + SOC: median 8 days
  - SOC alone: median 7 days
  - Hazard ratio: 0.846 (95% CI: 0.580 – 1.234, p=0.341)

- There was no difference in the rate of conversion to a negative SARS-CoV-2 RT-PCR between groups at 4, 7, 10, 14, or 21 days.

Abbreviations: HCQ = hydroxychloroquine; SOC = standard of care

Hydroxychloroquine + Standard of Care (SOC) vs. SOC Alone in Hospitalized Patients with COVID-19: Results

- Overall rate of symptoms alleviation within 28-days did not differ between patients who received HCQ + SOC vs. SOC alone
  - HCQ + SOC: 59.9% (95% CI: 45% – 75.3%)
  - SOC alone: 66.6% (95% CI: 39.5% – 90.9%)

- Median time to alleviation of clinical symptoms was similar across groups.
  - HCQ + SOC: 19 days
  - SOC alone: 21 days

- In a post-hoc subgroups analysis, controlling for receipt of other antiviral agents, HCQ + SOC was associated with a higher likelihood of improvement in clinical symptoms when compared to SOC alone.

- HCQ + SOC led to a more rapid decline in CRP and improvement in lymphopenia when compared to SOC alone, but overall improvement was similar by 28 days.

- Adverse events occurred in 30% of the HCQ + SOC group in comparison to 8.8% of the SOC alone. Diarrhea was the most common adverse event reported in patients who received HCQ (10%).

Conclusions: “Administration of hydroxychloroquine did not result in a significantly higher probability of negative conversion than standard of care alone in patients admitted to hospital with mainly persistent mild to moderate covid-19. Adverse events were higher in hydroxychloroquine recipients than in non-recipients.”