From: Ron Kirschner, MD, Medical Director

To: ALL HEALTH CARE PROFESSIONALS

Subject: Chloroquine and hydroxychloroquine overdose

Date: 4/14/20

* Chloroquine (CQ) and hydroxychloroquine (HCQ) are antimalarial drugs that have been suggested as possible treatments for Covid-19, but have narrow therapeutic indices and multiple toxic effects.
* CNS depression and/or seizures may require intubation/mechanical ventilation. These effects can by seen within 1-3 hours after acute overdose.
* Hypotension refractory to IV fluids should be treated with epinephrine as the first line vasopressor (0.25 mcg/kg/min, titrated to systolic BP >90 mmHg in adults).
* Diazepam 2 mg/kg IV over 30 min followed by 1-2 mg/kg/day x 2-4 d is recommended for serious toxicity. Phenobarbital or propofol can be added if necessary for refractory seizures.
* Hypokalemia, due to intracellular potassium shift, is an indicator of overdose severity.
* QRS widening can be treated with sodium bicarbonate, but give boluses rather than infusion, and monitor potassium carefully (recheck K after giving 150-200 meq NaBicarb).
* Correct hypokalemia cautiously – overaggressive correction may lead to rebound hyperkalemia as CQ/HCQ redistributes from blood into peripheral tissue.
* Hemolysis can occur, particularly in patients with G6PD deficiency.
* Ophthalmic toxicity, neuropathy, and cardiomyopathy are primarily seen with chronic anti-inflammatory use rather than acute overdose.
* Due to high volume of distribution and protein binding, dialysis is not expected to be effective. There is limited experience with lipid emulsion therapy.

References

Barry JD. Antimalarials (chapter 55) in *Goldfrank’s Toxicologic Emergencies* 11th ed, 2019. p 842-844.

Wong A. Hydroxychloroquine overdose: case report and recommendations: *Eur J Emerg Med* 2008; 15:16-18.

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