



ABSTRACTS IN URGENT CARE

- Hydroxychloroquine in COVID-19
- Herd Immunity for COVID-19
- Treating Minor MSK Pain
- Primary Care Visit Trends in the U.S.
- POCUS in Children with Respiratory Illness
- POCUS in Vision Loss

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Hydroxychloroquine Not Beneficial in Mild-to-Moderate COVID-19 Infections

Contributing author: Lauren Bulgarelli, MD

Key Point: Hydroxychloroquine was compared with the standard of care in a randomized trial and was not shown to be associated with a higher probability of negative conversion than the standard of care.

Citation: Tang W, Cao Z, Han M, et al. Hydroxychloroquine in patients with mainly mild to moderate coronavirus disease 2019: open label, randomised controlled trial. *BMJ*. 2020;369:m1849.

Relevance: Hydroxychloroquine has been widely utilized for the treatment of COVID-19 infections as it had shown promising in vitro results against two other coronavirus diseases. However, this study showed no significant improvement in probability of negative conversion compared to the standard of care. In addition, adverse events were higher in the hydroxychloroquine recipients.

Article Summary: A multicenter, open-label randomized controlled trial was completed with 150 patients admitted to the hospital with lab-confirmed COVID-19 infections. Half were assigned to the standard-of-care and half were assigned to the standard-of-care plus hydroxychloroquine group. The probability of negative conversion by 28 days in the standard-of-care plus hydroxychloroquine group was 85.4%. The probability of negative conversion in the standard-of-care group was 81.3%. The adverse-reaction rate was 9% in the standard-of-care group

and 30% in the hydroxychloroquine group. The authors concluded that there was not a significant benefit for hydroxychloroquine use in mild-to-moderate COVID-19 infections. In addition, there was significant risk for adverse events when using hydroxychloroquine. ■

Enhancing Herd Immunity to Control COVID-19

Contributing author: Lauren Bulgarelli, MD

Key Point: You can use a mathematical formula based on a country's total number of COVID-19 cases to predict the percentage of the population required to become infected to establish herd immunity.

Citation: Kwok KO, Lai F, Wei WI, et al. Herd immunity—estimating the level required to halt the COVID-19 epidemics in affected countries. *J Infect*. 2020;80(6):e32–e33.

Relevance: Herd immunity has been considered as a possible way to control the COVID-19 pandemic. The idea would be to expose younger, healthy individuals until we reach the level of herd immunity. However, the high percentage of people required to become infected for herd immunity combined with the high death rate may be difficult to accept as a way to control the pandemic.

Study Summary: The authors took the total number of cases from a large selection of individual countries and calculated the effective reproductive number for a given population. This number was then used to calculate the minimum level of population immunity to halt the spread of infection in that population. The percentages of population required to get infected for herd immunity ranged from 6% to 85%. However, the majority of countries had a percentage ranging from 60% to 80%. The study was limited by small sample sizes as it was published in the early days of the pandemic. ■

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Combining Oral Acetaminophen, Ibuprofen, and Codeine for Minor Acute Musculoskeletal Injuries Provides No Improvement in Pain Relief Compared to Acetaminophen Alone

Contributing author, Lauren Bulgarelli, MD

Key Point: Combining oral paracetamol (acetaminophen) with ibuprofen and codeine provides no improvement in pain relief when treating acute minor musculoskeletal injuries. Treatment with the combination drug regimen was also shown to have significantly more adverse events.

Citation: Gong J, Colligan M, Kirkpatrick C, Jones P. Oral paracetamol versus combination oral analgesics for acute musculoskeletal injuries. *Ann Emerg Med.* 2019;74(4):521–529.

Relevance: Prescribing opioid pain medications for treatment of acute injuries has become common practice and has been shown to increase risk for long-term opioid use. This study showed no significant difference in subjective pain scores for each group at 60 minutes. Treatment with the combination drug regimen was also shown to have significantly more adverse events. Therefore, there may not be much benefit to prescribing opioids for acute minor musculoskeletal injuries.

Article Summary: The authors conducted a randomized, double-blind controlled trial of 118 adults 18–65 years of age with acute musculoskeletal pain. The participants were assessed with a self-reported pain scale at 60 and 120 minutes following administration of either the combination therapy (1 g paracetamol, 60 mg codeine, and 400 mg ibuprofen) or paracetamol monotherapy. There was no statistically significant difference found between the groups in pain reduction at 60 minutes. There was a slight favor in pain reduction towards the combination therapy at 120 minutes. There was also one extra adverse reaction for every seven patients found in the combination therapy group. Limitations of the study included exclusion of any open wounds and head or facial injuries. In addition, almost half the patients dropped out before the 120-minute pain score due to discharge from the ED. This significantly decreased the power of the study which may put the 120-minute finding at high bias risk. ■

Primary Care Visits in the United States Are On the Decline Among Commercially Insured Adults

Contributing author, Lauren Bulgarelli, MD

Key Point: Although primary care visits decrease healthcare costs and improve patient outcomes, overall visits are on the decline—while urgent care visits are increasing.

Citation: Ganguli I, Shi Z, Orav EJ, et al. Declining use of primary

care among commercially insured adults in the United States, 2008–2016. *Ann Intern Med.* 2020;172(4):240–247.

“New data are in agreement with prior literature suggestive of the need for more research while upholding lung ultrasound as a possible tool to help reduce childhood radiation, along with improving the accuracy of diagnosing pneumonia by ultrasound in young children.”

Relevance: Primary care visits have been known to decrease overall healthcare costs and improve patient outcomes. There has been a push to increase primary care use in the United States. However, between 2008 and 2016 there was actually evidence of decline in primary care usage among commercially insured adults. The decline may be associated with decreased need for some primary care visits, use of alternative venues of care, and financial barriers.

Article Summary: The authors used a repeated cross sectional study using claims data from a single commercial insurer. They examined 142 million primary care visits total. The study revealed that total PCP visits declined by 24.2% and the proportion of adults with no PCP visit within a given year rose from 38.1% to 46.4%. Visits to specialists remained stable, and visits to urgent care increased by 46.9%. The decline in PCP visits was especially larger among younger patients, as well as low-income individuals. The study was limited by only examining one commercial insurer and did not include nonbillable clinician-patient interactions. ■

Utility of POCUS in Young Children with Lower Respiratory Disease

Contributing author, Chelsea Burgin MD, FAAFP

Key Point: The utility of lung ultrasound has grown exponentially over the past 10 to 20 years, more recently in the pediatric population and its developing role in assessment for pneumonia.

Citation: Biagi C, Pierantoni L, Baldazzi M, et al. Lung ultrasound for the diagnosis of pneumonia in children with acute bronchiolitis. *BMC Pulm Med.* 2018; 18(1):191.

Relevance: It can be challenging to differentiate acute bronchiolitis from acute bronchiolitis with a secondary pneumonia in young children. POCUS may be more accurate than chest x-ray in determining the value of antimicrobials.

Article Summary: In this prospective study, 87 children with a mean age of 6 months, all under 2 years of age, were hospitalized for lower respiratory disease/bronchiolitis. Each child received a CXR and lung ultrasound to evaluate for pneumonia. Twenty-five of the 87 children were diagnosed with a secondary pneumonia. With respect to a consolidation >1 cm, ultrasound had a specificity of 98.4%, compared with a specificity of 87.1% for CXR. Although it reflects a small sample size, this study is in agreement with prior literature and is suggestive of the need for more research while upholding lung ultrasound as a possible tool to help reduce childhood radiation while improving the accuracy of diagnosing pneumonia by ultrasound in young children. ■

POCUS for Vision Loss

Contributing author: Chelsea Burgin MD, FFAFP

Key Point: Ocular ultrasound is an effective modality to assess for retinal detachment and expedite specialty involvement.

Citation: Gottlieb M, Holladay D, Peksa G. Point-of-care ocular ultrasound for the diagnosis of retinal detachment: a systematic review and meta-analysis. *Acad Emerg Med.* 2019;26(8):931-939.

Relevance: Individuals with sudden visual disturbances present

to urgent care centers as they do the emergency department, where there is value in ocular POCUS to expedite the diagnosis of retinal detachment to help accelerate vision-sparing interventions.

Article Summary: Up to one quarter of patients who present with flashes, floaters, or sudden vision loss have a retinal tear or detachment. With limited resources and training, it is difficult for non eye specialists to conduct a proficient diagnostic fundoscopic examination. In this review article, 2,621 studies were found on the subject of ocular ultrasound, 11 of which met inclusion criteria. All 11 were prospective observational trials published between 1995 and 2018. The majority of ultrasound examiners were emergency physicians, five were radiologists, and one study did not report. Twenty-one percent of study participants were found to have a retinal detachment and none of the ultrasound exams were noted as indeterminate. Overall, the sensitivity was 94.2% and specificity 96.3% in the ability of ultrasound to rule in and rule out retinal detachment. POCUS has utility in acute visual disturbances when ophthalmology is not immediately available. Ocular POCUS can accurately identify retinal detachment and expedite vision sparing measures. ■



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