

RCEM COVID-19 CPD Journal club
Weekly top 5 papers

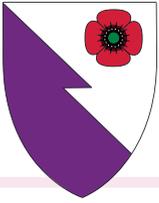
Rajesh Chatha, Matt Reed, Rachel McLatchie, Maddie Colmar, Salma Alawiye, Joseph McIntyre, Craig Davidson, Krishma Kataria, Benjamin Earle-Wright, Jesymin Choong, Sarah Jane Zammit and the RCEM COVID CPD team



This week's flash update comes from the EMERGE research group in Edinburgh led by RCEM Professor Matt Reed. Last year the group enabled almost 4000 Emergency Department patients to participate in clinical research, more than any other ED in the UK. This RCEM flash update was led by Rajesh Chatha, one of our two EMERGE TERN Fellows and this week is inspired by Orso et al in the European Journal of Emergency Medicine ¹ who discuss how lack of understanding and increasing anxiety regarding SARS-CoV-2 at the start of the pandemic led the medical and non-medical community to look to social media for guidance. This resulted in the spread of inaccurate information and changed both physician and patient behaviour. How did an unsubstantiated tweet by a French Minister of Health result in global clinical practice change; how did opinion, the lowest tier of evidence based medicine become the loudest voice? The often sincere and well meaning, yet inaccurate, information broadcast at the click of a button created confusion and conflicted the higher tier scientific evidence being published. We are at the frontline of an 'Infodemic'. We need to filter information, take individual responsibility for this and champion the cure that is good evidence-based medicine. Perhaps one to bear in mind before you next hit retweet!

The team have sorted through over 300 publications this week, and here are the papers that we think deserve your attention. As in previous weeks, these have been split into 3 categories that make it easy for you to focus on the papers that are most vital to your practice:

- Worth a peek: interesting, but not yet ready for prime time
- Head turner: new concepts
- Game changer: this paper should change practice



Risk stratification of patients admitted to hospital with covid-19 using the ISARIC WHO Clinical Characterisation Protocol: development and validation of the 4C Mortality Score by Stephen R Knight et al ²

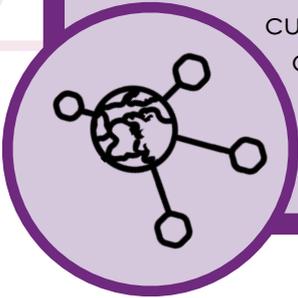
Topic: Epidemiology & Prognosis

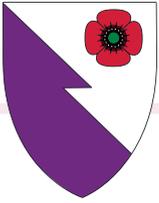
Rating: Game changer

Scout: Matt Reed



This large prospective observational cohort study will be familiar to many of you who recruited to the ISARIC WHO Clinical Characterisation UK Protocol. The study aimed to develop and validate a risk score to predict mortality in COVID-19 patients admitted to hospital. The resulting 4C Mortality score was derived in 35,463 adults (≥ 18) patients admitted to 260 UK hospitals with proven COVID-19 between February and May 2020 and validated in 22,361 patients between May and June 2020. Overall mortality was over 30%. The 4C Mortality Score, derived using a penalised logistic regression model, has 8 variables available at initial assessment: Age, sex, number of comorbidities, respiratory rate, peripheral O₂ saturation, level of consciousness, urea and CRP. An easy to use calculator to assign a score between 0 and 21 is available at <https://isaric4c.net/risk>. The 4C score had an area under the ROC curve of 0.79 (CI 0.78-0.79) for mortality outperforming 15 existing scores. This is a huge UK study, the 4C score is easy to use and groups patients into low (0-3), intermediate (4-8), high (9-14) and very high risk (15+) risk of death groups and I suspect is likely to be adopted for admission to hospital and critical care decisions in a hospital near you very soon.





Azithromycin in addition to standard of care versus standard of care alone in the treatment of patients admitted to the hospital with severe COVID-19 in Brazil (COALITION II): a randomised clinical trial by Remo M Furtado et al ³

Topic: Therapeutics

Rating: Head Turner

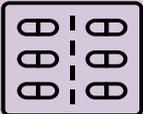
Scout: Craig Davidson

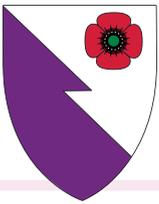


In March 2020 observational data was published suggesting that azithromycin improved COVID-19 viral clearance when added to hydroxychloroquine. In addition, it is thought macrolides may have some immunomodulatory effects in certain viral illnesses. This group sought to test whether azithromycin in addition to standard care (including hydroxychloroquine) improved clinical outcomes in an RCT. In 57 centres in Brazil, investigators randomised adults admitted with COVID-19 if they also required O₂, NIV or mechanical ventilation. Primary outcome was measured on an ordinal scale of 0 (discharged home) to 6 (deceased) at 15 days. An odds ratio (OR) of greater than 1 therefore represents a move up the scale (worse outcome).

They recruited 397 COVID positive patients in total with 214 randomised to azithromycin. Both groups were similar at baseline although 21% of the azithromycin group were given steroids compared to 15% in the control. Primary outcome showed no benefit with azithromycin (OR 1.36 favouring the control, but non-significant). This negative trend was replicated across the other outcomes. While the use of hydroxychloroquine limits generalisability to our current UK practice, it is difficult to imagine azithromycin alone being substantially better.

A further observational matched cohort study of 239 patients from Spain published this week also found no clinical improvement with azithromycin. 4 For now we can stick with time honoured adage that antibiotics do not work on viruses...at least until the next RECOVERY trial update...





**Current meta-analysis does not support the possibility of COVID-19 reinfections
by M Arafkas et al ⁵**

Topic: Epidemiology and Diagnostics
Rating: Worth a Peak
Scout: Rajesh Chatha



This meta-analysis examined the evidence of re-infections in current data. Of 30,000 COVID-19 papers, seven papers focussed on COVID-19 re-infections. Five studies described 15 case reports of re-infection from the United States and France. The results showed that following the first episode of infection, cases of clinical relapse are reported at 34 (mean) \pm 10.5 days after full recovery. Patients with clinical relapse have persisting positive COVID-19 PCR testing results until 39 \pm 9 days following initial positive testing. Two studies in asymptomatic patients (combined n= 9) showed 2 patients had positive testing at least 90 days after initial COVID-19 diagnosis with a mean of 54 \pm 24 days. There were no reports of any clinical re-infections after a 70-day period following initial infection. The authors conclude that all reported cases of COVID-19 reinfections are in fact protracted initial infections. To diagnose a true COVID-19 reinfection, positive COVID-19 testing combined with recurrent clinical symptoms occurring outside of a 90-day timeframe is required.

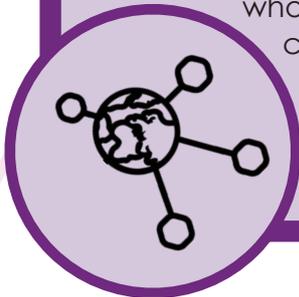


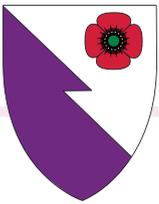
**Seroprevalence of SARS-CoV-2 Among Frontline Health Care Personnel in a
Multistate Hospital Network - 13 Academic Medical Centers, April-June
2020 by Wesley H Self et al ⁶**

Topic: Epidemiology
Rating: Worth a Peak
Scout: Jeysmin Choong



This study, involving 13 academic medical centres in the United States, measured SARS-CoV-2 antibodies amongst frontline health care professionals (HCP) with a view to identify past infection and the associated characteristics. Among the 3248 frontline HCP enrolled, 6% (194) tested positive for serology. In the seropositive group, 29% did not recall any symptoms consistent with viral illness in the preceding months, 44% did not suspect they previously had COVID-19 and 69% did not have a previous test demonstrating acute SARS-CoV-2 infection. Prevalence of SARS-CoV-2 antibodies was lower amongst personnel who reported always wearing a face covering while caring for patients (6%), compared with those who did not (9%). This study highlights the under detection of SARS-CoV-2 infection among HCPs and the importance of availability and proper use of PPE to reduce hospital transmission. Perhaps regular testing of HCP would prevent 'silent transmission' however this is likely to be limited by resources and test availability.





Responding to Health Care Professionals' Mental Health Needs During COVID-19 Through the Rapid Implementation of Project ECHO. By Sanjeev Sockalingam et al ⁷

Topic: Mental Health and Wellbeing

Rating: Worth a Peak

Scout: Salma Alawiye



With no clear endpoint to the pandemic, healthcare professionals are at risk of developing COVID-19 related stress. An existing tele-mentoring project in Ontario, Canada created an extension of its service catering specifically to frontline healthcare workers who would be directly involved in the care of COVID patients. Project Extension for Community Healthcare Outcomes - Coping with COVID (Project ECHO-CWC) provides twice-weekly virtual sessions to address anxieties surrounding the pandemic in hospital workers. The sessions use a variety of media, examples of which are a mindfulness exercise, case-based discussion, question and answer sessions and library updates as well as didactic presentation. Initial sessions covered a range of topics including management of COVID-19-related anxiety, PPE and personal safety, sleep and nutrition, fear of missing information and an overview of self-care. 426 participants registered for the service, and 129 participants ranked their self-efficacy in five areas of mental health competency, as well as their perceived levels of risk pertaining to COVID-19. Participants reported feeling increased levels of stress at work and fear surrounding both catching and passing on COVID-19. Data from the initial five sessions (n=38) shows they were well-received, scoring a mean of 4.26 on a 5 point Likert scale.



In summary

ISARIC 4C Mortality Score is an accurate, easy to use score to predict inpatient mortality in patients presenting with COVID-19

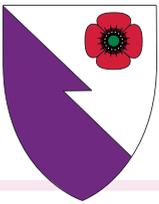
Azithromycin currently has no role in the management of COVID-19

All current reported cases of COVID-19 re-infections are likely protracted initial infections. To diagnose true re-infection a positive test combined with recurrent clinical symptoms outside of the 90 day timeframe must be present.

A high proportion of COVID-19 infections amongst health professionals go undetected. Universal use of face coverings and lower clinical thresholds for testing could be important strategies for reducing hospital transmission

Teleconferencing may provide an effective way of combating mental health stressors amongst health care workers during the COVID-19 pandemic.





References



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2. Stephen R Knight et al. Risk stratification of patients admitted to hospital with covid-19 using the ISARIC WHO Clinical Characterisation Protocol: development and validation of the 4C Mortality Score. *BMJ* 2020; 370: m3339; <https://www.bmj.com/content/bmj/370/bmj.m3339.full.pdf>
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