



Highlights from this issue

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The Triumvirate

Throughout the COVID-19 pandemic, UK politicians have claimed to “follow the science” – in some cases all the way from Durham to Barnard Castle... In this issue of *Thorax* the Triumvirate bring you the best science and follow it to some unexpected places: all the way from Manchester (community-based spirometry data) (see page 655) to the Antarctic (in the footsteps of Ernest Shackleton) (see page 693).

FOLLOWING THE SCIENCE IN THE FOOTSTEPS OF ERNEST SHACKLETON

One of the important, unanswered questions of the COVID-19 pandemic is: “How many people have had asymptomatic infection?” If past infection does confer some immunity, then a high rate of “silent” infection would mean higher levels of immunity in the population. This in turn might allow a more rapid relaxation of lockdown and a faster economic recovery. In this month’s journal, Ing and colleagues describe a natural experiment on an Antarctic cruise ship (see page 693). The ship set sail after the pandemic was declared and had no contact with the outside world until it arrived in Uruguay 3 weeks later, with suspected cases on board. Health officials in Uruguay tested all 217 individuals on board and 128 were positive for COVID-19. Of those 104 (81%) were asymptomatic. In a linked editorial, Keeley and colleagues question whether symptomatic cases are “the tip of the iceberg” and introduce us to the overdispersion parameter (10% of individuals may be responsible for 80% of secondary transmissions) (see page 621).

FROM EYE TESTS TO HEARING TESTS

In a now notorious incident, Dominic Cummings, a senior UK government advisor, drove from Durham to Barnard Castle, in breach of the coronavirus lockdown, “to test his eyesight”. Testing hearing, on the other hand, is an important issue for patients with cystic fibrosis (CF) who have had recurrent exposure to prolonged courses and high doses of aminoglycosides (which are ototoxic). Current testing requires a trained audiologist and a sound proof room and so is difficult to perform frequently. In *Thorax* this month Vijayasingam *et al* describe a comparison of audiometry, using web and tablet based systems, with standard audiometry (see page 632). They found that 48% of 126 CF adults had hearing loss (any frequency). The tablet based system performed well (sensitivity 93% and specificity 88%) but the web based self-testing and questionnaires were unreliable. However just about any test is more plausible than driving 25 miles to test your eyes...

ARTIFICIAL INTELLIGENCE QUOTIENT

During the COVID-19 pandemic, Professors Whitty, Vallance, Powis and Van Tam provided

important daily scientific briefings detailing the hospital admissions, ICU admissions and mortality across NHS England. This data driven approach to clinical care became central to the NHS pandemic strategy. However, much of these data were extracted manually across the NHS and we should learn from Gonen and colleagues (see page 695), who report the applications of artificial intelligence and machine learning in this edition of *Thorax*. To use deep neural networks to process complex input and output a classification such as ‘improving’ or ‘deteriorating’ would be helpful. Indeed, deep neural networks have shown the potential to equal or even surpass the accuracy of human experts. In the future, we may have a different format for such daily briefings with R2-D2 & C-3PO leading the team.

P.R. – PRESS RELEASE OR PEER REVIEW?

With the press release of the COVID-19 RECOVERY-RS trial results prior to the peer review process, the Triumvirate have considered the balance between rapid access to clinical data to potentially improve patient outcome and the potential harm if data have not be subjected to scientific peer review. With that in mind, Anand and colleagues report a systematic review and meta-analysis of mucoactive agents for acute respiratory failure in the critically ill (see page 623). The authors analysed 13 clinical trials with 1712 patients with mucoactive agents demonstrating no effect on the duration of mechanical ventilation, mortality, hospital stay and ventilator-free days, although there was an effect on reducing length of stay in the intensive care unit. Although the findings do not support the use of mucoactive agents in critically ill patients with acute respiratory failure, the authors suggest high-quality randomised controlled trials are needed to determine the role of specific mucoactive agents in critically ill patients with acute respiratory failure. The Triumvirate wholly agrees with this suggestion but also considers that high quality peer review is essential prior to a press release.

THE MORE YOU LOOK THE MORE YOU FIND

Even Donald Trump, not known for being an avid follower of science, knows that testing is important although how the president would use that information is moot. As he said “When you do testing to that extent, you’re going to find more people, you’re going to find more cases. So I said to my people, ‘Slow the testing down, please.’ They test and they test.” Testing is also important for follow-up as well as diagnosis as Jacobs and colleagues describe (see page

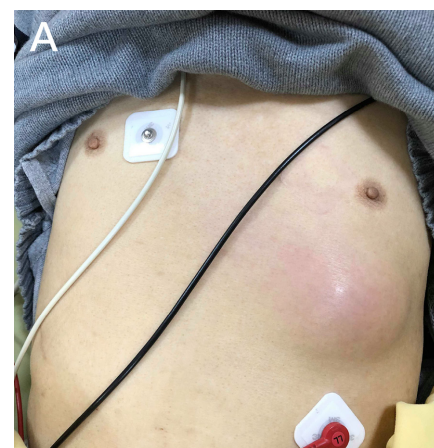
648). To determine whether CT could be used to detect outcome in patients with IPF. They found in patients with subtle changes in FVC, traction change was independently associated with mortality demonstrating the importance of this feature in progression of IPF. Trumpian logic dictates, therefore, that we must stop assessing radiology and lung function to prevent an epidemic of fibrotic progression. Alternative wisdom would suggest that patients at risk of progression should be identified early and efforts focused on slow disease down in this group of patients. Which version of reality do you believe in?

THE END OF THE ANTI-VAXX MOVEMENT?

With efforts across the globe being focused on developing vaccine to resolve the COVID-19 crisis is tempting to believe the argument is won. Even high profile sceptics, such as the US President, believe that a vaccine is the best solution. While we wait for the development of a COVID-19 vaccine we must remember that other infectious diseases exist. In this issue of *Thorax* Janaptla and colleagues describe the long term efficacy of the PCV13 vaccine and describe the level of IgG needed to eliminate pneumococcus serotype 19A (see page 689). One hopes in the near future we will be able to make similar predictions for COVID-19.

FOLLOW THE SCIENCE TO THE CORRECT DIAGNOSIS

This month’s pulmonary puzzle is a man with a chest wall mass and hypotension (see page 702)



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