Highlights from this issue

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The Triumvirate

As the Triumvirate write this edition of Airwaves, rumour and counter-rumour swirl around the corridors of power in number 10 Downing Street – residence of the British Prime Minister (currently Boris Johnson). Allegations abound of intimidation of members of parliament and clandestine, parties – held whilst the rest of the country was in lockdown. 'Do as I say, not as I do…' Here at *Thorax* we will wield: '*…the simple sword of truth and the trusty shield of British fair play…*' to bring you the best of respiratory research (with a twist of the 'Ides of March'). Watch your back, Boris…

AEROSOLS WITH YOUR WINE AND CHEESE?

Lockdown parties in Downing Street have been justified on the basis that they were work meetings. We can speculate that work, for political wonks, does not include delivering aerosol generating therapy such as continuous positive airways pressure (CPAP) and high-flow nasal oxygen (HFNO). In contrast, these procedures are all in a day's work on critical care. But do they increase the risk of transmitting respiratory viruses? In this month's journal Winslow and colleagues describe air and environmental sampling from 30 patients receiving either CPAP or HFNO (*see page 259*). Although 70% of participants were PCR positive, only 4% of air and 7% of surface samples were positive and CPAP and HFNO did not increase the risk vs supplementary oxygen. This question is also addressed by Hamilton and colleagues (*see page 276*) who compared aerosol generation caused by CPAP, HFNO speaking and coughing in 25 healthy volunteers in a laminar flow theatre. Coughing generated the greatest amount of aerosol. CPAP generated relatively little and the aerosol from HFNO came directly from the machine and not the patient. On the wards, they found that more aerosol was generated by patients with COVID-19 coughing than by coughing volunteers. A linked editorial (*see page 216*) calls for 'nuanced decisions' on infection control measures. We are not told whether braying with laughter generates aerosol clouds but, if confirmed, the Downing Street partygoers may be enjoying coronavirus with their wine and cheese. Still, all in a day's work…

CATS, DOGS, SPIROMETRY AND AEROSOLS

Followers on Twitter will be familiar with the acerbic commentary, on the affairs of government, provided by Larry the Downing Street cat (@Number10cat). Cats are frequently implicated as allergic triggers of asthma and spirometry is an essential tool in diagnosing and managing the condition. However, spirometry has been considered by some to be an aerosol generating procedure during the COVID-19 pandemic. Is this justified? Sheikh and colleagues (*see page 292*) attempt to answer this question in this issue of *Thorax*. In a brief communication, they describe an observational study of 33 healthy volunteers and 10 patients with lung disease. Coughing generated more aerosols than peak flow and the addition of a viral filter could reduce aerosols, caused by peak flow, by a factor of 10. Exhaled nitric oxide measurements caused negligible aerosols. So it seems that the risk of transmitting aerosol-born infection, through these diagnostic procedures, is low and can be mitigated further. The political self-harm, inflicted by Downing Street party-goers cannot however be mitigated so easily – as Larry the Cat is keen to point out. So much for 'operation save big dog'…

FAILURE OF CHECKPOINTS

A key role of Government is to implement checks and balances and as we write Airwaves this month we are hearing of the parallel universe that the Prime Minister of the UK was living in during the COVID-19 lockdown. The Government implemented checks and balances that prevented gatherings but the UK Prime Minister is alleged to have avoided these particular checkpoints. One can only assume he had been in receipt of checkpoint kinase Inhibitors. Much like the current Prime Minister, fibrotic lung fibroblasts have enhanced survival and like government parties are hyperproliferative. Checkpoint kinases are also involved in cell cycle control and DNA damage response and therefore have been postulated to have a role in Idiopathic Pulmonary Fibrosis. In this issue of *Thorax* (*see page 247*) Wu and colleagues demonstrate that the checkpoint kinase proteins CHK1 and CHK2 were elevated in fibrotic lung tissue in both in vivo models and human disease. Inhibiting the CHK1 and CHK2 proteins with both specific and dual inhibitors mitigated the apoptosis resistance and hyperproliferative responses of fibroblasts and reduced TGFβ induced fibroblast activation. Furthermore, using two in vivo models the authors were able to demonstrate that the dual inhibitor was able to reduce the development of lung fibrosis and associated pulmonary hypertension. It is still not clear to us what recommendations Sue Gray (the civil servant investigating lockdown parties) will make, however we suspect they will not involve treatment with LY2606368.

MODEL BEHAVIOUR

The headlines have been dominated by alleged irreverent behaviour by our politicians. Perhaps, a 6 week behaviour change intervention would be helpful. This was the approach taken by Cheng and colleagues (*see page 231*), as part of a randomised controlled trial, to reduce sedentary behaviour in patients with chronic obstructive pulmonary disease. The behaviour change intervention consisted of once weekly sessions for 6 weeks with a physiotherapist to reduce sedentary behaviour through education, goal setting and real-time physical activity feedback using 7 day accelerometry. 65 patients completed the study (74 years, FEV1 55% predicted, 49% male) but, at 6 weeks, there was no between-group differences in time spent sedentary. Although there was no behaviour change in COPD patients, we must not give up hope for our politicians. However, as shown by the COPD pay-for-performance scheme lead by Stone and colleagues (*see page 239*), financial incentives are not always guaranteed to lead to change. Stone and colleagues suggest we need to change the focus away from COPD 30-day mortality and readmission, but the Triumvirate consider that we should move toward value-based healthcare rather than pay-for-performance. Following that, we could then move to value-based politicians.