



## Highlights from this issue

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## The Triumvirate

An early addition to the Triumvirate's record collection was "Elected" the 1972 single by Alice Cooper. The song was released a few months before the US presidential election of that year: a contest between Richard Nixon and George McGovern. Richard Nixon won but proceedings for his impeachment began the following year. This month the people of the United States will vote for their leader once again and, in Airwaves, we bring you an election themed selection of respiratory science, with psephologists, Gilbert's Syndrome and, of course, Alice Cooper.

**THIRD PARTY CONFOUNDING...**

Alice Cooper promised: "...the formation of a new party, a third party, the Wild Party!" The presence of a third party, or confounding variable, is constant source of irritation to epidemiologists who strive to minimise unmeasured confounding. A powerful tool to reduce confounding is the Mendelian randomisation study. In this month's *Thorax* (see page 955) Laura Horsfall and colleagues describe a Mendelian randomisation study which looks at the possibility of mildly raised serum bilirubin (Gilbert's Syndrome) providing some protection against lung cancer. Two genetic variants explain around 40% of the variability of bilirubin in the general population. Mendelian randomisation (using these two genetic variants) goes some way to excluding the possibility that any apparent relationship between bilirubin and lung cancer is due to a third (confounding) factor. The authors found that, for each 5  $\mu\text{mol/L}$  increase in bilirubin there was a 1.2/10 000 per year decrease in lung cancer incidence. Sadly, the effect was not seen in never smokers! Although Alice Cooper has the voice of a 60 a day man, there is no reliable information on whether he smokes (or has Gilbert's Syndrome)...

**PSEPHOLOGISTS VS. PROCALCITONIN**

During elections, political parties and journalists will often try to assess the mood of the electorate using focus groups or opinion polls. In medicine, we attempt to predict the optimal management of disease using biomarkers. One such biomarker is procalcitonin, expression of which is stimulated by bacterial infection and suppressed by viral infection via interferon signalling. Clinicians may interpret elevated procalcitonin during a respiratory viral infection as evidence of bacterial coinfection and give

antibiotics. In this issue of the journal (see page 974), Samir Gautam and colleagues cast doubt on this practice. They compare a group of over 2000 patients hospitalised with viral infection alone to 179 patients with bacterial coinfection and find that, after matching for severity, the specificity of procalcitonin for bacterial coinfection was greatly diminished. Indeed procalcitonin seems to be an indicator of severity rather than bacterial infection. It is however unlikely that psephologists will abandon their focus groups or opinion polls any time soon...

**NEW AIR IN AND OLD AIR OUT**

There are serious challenges in holding an election during the COVID-19 pandemic, in particular, if voters are unable to vote by post or submit a digital vote. The polling stations will need to ensure that there is social distancing, that face masks are worn, hand hygiene is adhered to and ventilation in the polling station meets health and safety standards. Without this, there is a risk a risk of spreading infection. In Europe, Maxime Patout and colleagues (see page 965) have been focused on another form of ventilation, home non-invasive ventilation (NIV) and its effects on long-term survival. The study investigated the outcome of 1746 patients between 2008 and 2014 established on home NIV in a UK and French centre. The overall survival following NIV initiation was 6.6 years. The mortality rate following initiation of home NIV varied according to underlying aetiology of respiratory failure. Importantly, in patients with chronic respiratory failure, initiation of home NIV following an acute admission and low levels of NIV adherence were poor prognostic features. Such factors may be amenable to intervention, similar to the ventilation in a polling station that can hopefully clear the noxious gas emitted from the current incumbent of the White House.

**DRUGS AND ROCK 'N' ROLL**

Alice Cooper is possibly one of the wildest rockers of all time, but he is different from many as he is still alive. Although there are many reports of his alcohol and drug addiction, it is unlikely that he would have taken beta-blockers. It is doubtful such a class of drug would have allowed him to strike fear into his fans as the ultimate rock villain. Daniel Rasmussen and colleagues (see page 928), far from the world of macabre rock

stardom, investigated the effect of beta-blocker use and acute exacerbations of COPD following myocardial infarction. In this Danish study, 10 884 patients with COPD who were discharged after first-time myocardial infarction (MI) were followed for 13 years and the authors found that beta-blocker use was not associated with increased risk of AECOPD following MI. This finding was independent of COPD severity, symptom burden and exacerbation history, and supports the safety of beta-blockers in patients with COPD, including high-risk patients with severe disease. Alice, we suggest you think about using beta-blockers in the future.

**AN ORDERLY TRANSITION**

A key feature in a democracy is the orderly transition of power from one ruler to another following an election. A major concern in the upcoming US Presidential Election should a republican to democrat transition be required, is that the signalling that is needed to ensure a normal transition may be subverted and lead to disorder. In this issue of *Thorax*, Bae and colleagues investigate disruption of another profoundly important signalling pathway (see page 985), the Wnt signalling pathway and demonstrate that when it is activated it leads to epithelial to mesenchymal transition (EMT) and chronic rhinosinusitis with neutrophilia and IL17A positive cells. When mice with nasal polyps were given an inhibitor of Wnt (ICG-001) it reduced inflammation, nasal polyps and markers of epithelial to mesenchymal transition. One can only hope that should the nature of the transition in this year's liking not go the way either party's supporters want, they do not use Wnt inhibitors to suppress the outcome of the election.

**MASKS, RALLIES AND THE US ELECTIONS**

Some recent US election rallies have drawn criticism because few participants have worn masks, increasing the risks of COVID-19 transmission. See our video feature (see page 1024) which compares one- and two-layer cloth face coverings with a three-ply surgical mask.

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