



# What's hot that the other lot got

Kathryn Prior

## WHY IS WHOOPING COUGH ON THE RISE? IS IT DUE TO THE VACCINE OR UPTAKE?

The highest number of cases in whooping cough in the USA since 1955 was seen in 2012. The age group affected was those aged 7–11. Five causes for this have been postulated: (1) an evolution in the bacteria away from the vaccine antigen; (2) a decline in vaccine coverage levels; (3) a change in vaccine efficacy and/or duration of protection due to the shift to the acellular vaccine, or a vaccine with lower efficacy; (4) the decline of natural boosting, through reduced exposure to naturally circulating pertussis bacteria; and (5) an increase in disease reporting rates. The team modelled each possibility (doi: 10.1371/journal.pcbi.1004138). The best match was that the efficacy and duration of the cellular pertussis vaccine was lower than the whole cellular pertussis vaccination (this was phased out by 1992 due to concerns about reactogenicity). The model produced allows further testing to be carried out for optimal dosing and timing.

## TB TREATMENT WITH MOXIFLOXACIN

New drugs are needed for the treatment of TB. This trial looked at a new regimen that could be used in TB (doi: 10.1016/S0140-6736(14)62002-X). In total, 207 patients who were treatment naive with drug-susceptible pulmonary TB were randomised to receive either 8 weeks of moxifloxacin, 100 mg pretomanid and pyrazinamide (PZA) (MPa100Z regimen); moxifloxacin, 200 mg pretomanid, and pyrazinamide (MPa200Z regimen); or the current standard care for drug-susceptible pulmonary TB, isoniazid, rifampicin, PZA and ethambutol (HRZE regimen). A group of patients with multidrug-resistant TB received MPa200Z. The outcome looked at the bactericidal activity of the drug in the sputum. The bactericidal activity of MPa200Z on days 0–56 (0.155, 95% Bayesian credibility interval 0.133–0.178) was significantly greater than for HRZE

(0.112, 0.093–0.131). DRMPa200Z (n=9) had bactericidal activity of 0.117 (0.070–0.174). The bactericidal activity on days 7–14 correlated with bactericidal activity on days 7–56. The side effect profile was similar across the three groups. The treatment combination has now entered phase 3 trials.

## A NEW DRUG FOR DUCHENNE'S MUSCULAR DYSTROPHY

Idebenone is a short-chain benzoquinone that acts as a potent antioxidant and inhibitor of lipid peroxidation that stimulates mitochondrial electron flux and cellular energy production. It has been shown in a phase 2 randomised placebo controlled trial that it had beneficial effects on cardiac and respiratory markers stabilising peak expiratory flow as a per cent predicted (PEF%<sub>p</sub>). This effect was larger in those not on glucocorticoids. In this trial, patients were randomised to idebenone or placebo for 52 weeks (doi: 10.1016/S0140-6736(15)60025-3). The primary outcome being the change in PEF%<sub>p</sub> at 52 weeks. There was a significant fall in the PEF%<sub>p</sub> by 9.01%<sub>p</sub> at week 52 in the placebo group compared with the fall in the idebenone group being 3.05%<sub>p</sub>, this being apparent by week 26. Other respiratory measurements showed a similar pattern. The effect was similar between those who had taken steroids and those who were steroid naive. Treatment was well tolerated, the significant side effect of idebenone being mild diarrhoea seen in 25%.

## WHAT IS THE COMPLICATION RATE OF PERIPHERALLY INSERTED CENTRAL CATHETERS?

We are increasingly using peripherally inserted central catheters (PICCs) to deliver courses of treatment in those with bronchiectasis, and due to this we need to be aware of the complication rate. This study looked prospectively at 182 PICCs placed in 117 patients in one French centre (doi: 10.5301/jva.5000347). All placement was via ultrasound and was successful in 174/182 (95.6%). The mean time of the catheter being in place was 15±9 days. There were no catheter-associated blood

stream infections. The main complications were symptomatic upper limb deep vein thrombosis (2%), catheter obstruction (18%) and persistent pain after catheter insertion (18%).

## DOES DISTANCE TO HOSPITAL MATTER IN COPD?

Some parts of the UK are remote from secondary care. A group in North Wales noticed this and looked at the whether or not those who were further from hospital were sicker on arrival (doi: 10.1136/emmermed-2015-204880.18). Seventy-two records were analysed in a retrospective cohort study. They recorded the National Health Service early warning score (NEWS) at ambulance pick up and arrival in the emergency department and plotted this against distance from the hospital. They found that the NEWS score on pick up rose linearly as the distance from the hospital increased, from 6/7 to 8/9. The NEWS score on arrival did not rise until the patient lived more than 35 miles from the hospital when the score rose from 6/8 to 12.

## CAN OXYGEN SATURATION TO FRACTION OF INSPIRED OXYGEN CONCENTRATION (SPO<sub>2</sub>/FIO<sub>2</sub>) RATIO BE USED AS AN EARLY PREDICTOR FOR ADULT RESPIRATORY DISTRESS SYNDROME?

Ways of predicting those who could develop adult respiratory distress syndrome (ARDS) would be useful in clinical practice. SpO<sub>2</sub>/FiO<sub>2</sub> has been validated as a surrogate marker for partial pressure to fraction of inspired oxygen in the mechanically ventilated patient. This study assessed its role in the prediction of ARDS when calculated within 6 h of admission (doi: 10.1177/0885066613516411). An established cohort of 4646 patients was used. The median SpO<sub>2</sub>/FiO<sub>2</sub> was 254 in those who developed ARDS and 452 in those who did not. There was a significant association between SpO<sub>2</sub>/FiO<sub>2</sub> and ARDS (p<0.01). SpO<sub>2</sub>/FiO<sub>2</sub> was shown to be an independent predictor of ARDS in a dose-dependent manner.

**Competing interests** None declared.

**Provenance and peer review** Commissioned; internally peer reviewed.



CrossMark

**To cite** Prior K. *Thorax* 2015;**70**:810.

*Thorax* 2015;**70**:810.  
doi:10.1136/thoraxjnl-2015-207387

