



# Highlights from this issue

doi:10.1136/thoraxjnl-2020-214580

## The Triumvirate

To celebrate the current six nations rugby tournament, this month's Airwaves draws inspiration from the giants (literally) comprising the national teams of England, Wales, Scotland, Ireland, France and Italy. No matter which team you are rooting for there is something for everyone in this issue!

### BACK PAIN AND HYPOXIA FROM THE IRISH TEAM

Ireland won the Six Nations Championship in 2018 – a tournament marred by numerous injuries, including back injuries. This month's pulmonary puzzle (see page 290) comes from another Irish team – from Galway University Hospitals in the West of Ireland. The authors describe unexpected pre-operative hypoxaemia in a patient with a back injury – although the individual in question was an octogenarian and a little too old for the Ireland squad. The Triumvirate don't engage in plot spoilers but suffice to say that the diagnosis was reached with the help of echocardiography and a surgical intervention proved effective. As the 2020 Six Nations Tournament begins, let's hope for no collapsed vertebrae. At least one of The Triumvirate will be cheering for another Irish victory!



### GPS AND RUGBY COACHING

GPS tracking of the activity of individual players on the field is now widely used in elite level rugby coaching. For an in depth discussion of this topic please see: *Int J Sports Sci Coach*. 2016;11(2):200–11. Another use of geospatial data is described by Lewis and colleagues in *Thorax* this month (see page 262). The authors (from the England team) measured deprivation indices for geographic areas in England and compared these with bronchiolitis admission rates and with the timing of the winter peak in admissions. They found a positive association between area level deprivation and bronchiolitis admission rates as well as an association between higher population densities and the timing of the peak of the winter epidemic. They conclude that around a quarter of the variation

in bronchiolitis admission rates is explained by local demographic characteristics. It is unlikely that GPS tracking of rugby players will predict later hospitalisation but at least it will make sure no one is slacking!

### GRAND SLAM

The Six nations Grand Slam happens when one team wins all the games in the competitions and was last won by Wales in 2019. There are a number of different types of Grand Slam and in interstitial lung disease the combination of infection on the background of progressive pulmonary fibrosis leads to the Grand Slam of an acute exacerbation with an uncomfortably high mortality rate of around 75%. In this issue of *Thorax* (see page 227) Cho and colleagues define the mechanism of altered metabolism in the development of acute exacerbations of pulmonary fibrosis. They used a bleomycin model of pulmonary fibrosis in mice with myeloid deficiency of *Glut1* or global deficiency of the *Aim2* genes and induced an acute exacerbation with *S. pneumoniae* infection. They demonstrated that these mice had reduced fibrosis following infection suggesting that GLUT1 mediated glycolysis was important for the development of regulating the AIM2 inflammasome and subsequent lung fibrosis. Maybe GLUT1 deficiency will be the only way to prevent another Welsh Grand Slam?

### RAGING RUGBY

It has been said that Rugby Union is 'a game for thugs played by male' and indeed the brutal rage on show can be quite shocking at times. In this issue of *Thorax* (see page 209) Zhang and colleagues investigate a different type of shock to understand how the immune system's response to shock may contribute to the lethality of haemorrhage. They found that group two innate lymphoid cells (ILC2s) are increased after haemorrhagic shock. In an in vivo model the investigators demonstrated that increased RAGE signalling promoted type two cytokine mediated inflammation and lung injury which contributes to the adverse consequences of haemorrhagic shock. So it would appear that in life, as in Rugby, if you dial down your rage, you can reduce the consequences of shock.

### HOME NATIONS

In 1883, the first Home Nations Championship was played between England, Ireland, Scotland and Wales with victories by any Home Nation over all of the other three Home Nations in one Championship season termed the Triple

Crown. This focus on the home was employed by Duiverman and colleagues (see page 244) in their clinical trial investigating the home initiation of non-invasive ventilation, with the use of telemedicine, in stable hypercapnic COPD. Primary outcome was daytime arterial carbon dioxide pressure reduction after 6 months NIV treatment. Home NIV initiation was non-inferior to in-hospital initiation with the both groups showing a PaCO<sub>2</sub> reduction at 6 months compared with baseline. Indeed, health-related quality of life improved similarly in both groups with reduced cost in the home initiation group. There is no place like home as Dr Hill discusses in the accompanying editorial (see page 196).

### ZINC MUSCLE RUB

With so many games being played, both domestically and in Europe, the chances of having everyone available for all the matches are slim to none so the coaches such as Eddie Jones, Noel McNamara, Gregor Townsend and Wayne Pivac must simply cross their fingers and pray that players do not suffer an injury. Perhaps the coaching staff can consider zinc supplementation similar to Wessel and colleagues (see page 253) who used this to ameliorate acute lung injury (ALI) by reducing neutrophil recruitment and activity. Unlike rugby players, the authors investigated the effect of zinc on deregulated neutrophil recruitment and hyper-activation in an ALI mouse model. Injecting zinc 24 hours prior to lipopolysaccharide-induced ALI decreased the recruitment of neutrophils to the lungs and prevented their hyperactivity. Using zinc supplementation could be considered to prevent acute lung injury, but The Triumvirate are unsure if Eddie, Noel, Gregor and Wayne should rub zinc into the injuries of their players.

### WORLD TB DAY 2020

As well as celebrating rugby prowess, our March issue draws your attention to World TB Day on 24 March. Please see our TB articles in this issue (see pages 269 and 292).

**Funding** The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

**Competing interests** None declared.

**Patient consent for publication** Not required.

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

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