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# Highlights from this issue

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*The Triumvirate*

## SWEET THURSDAY

In his novel 'Sweet Thursday' John Steinbeck chronicles the lives of the poor residents of Monterey, California. The novel contains the remark: 'I guess a man is the only kind of varmint sets his own trap, baits it, and then steps in it.' This month's Editors' Choice, Qiu and colleagues describe some of the 'traps', which are set within the human body – 'neutrophil extracellular traps' or 'NETs' (see page 1084). These NETs comprise a mesh of DNA, containing antimicrobial proteins and enzymes which allow extracellular killing of microbes. Qiu *et al* studied circulating neutrophils from mice exposed to cigarette smoke extract. They showed that, in these conditions, neutrophils release NETs more readily and that they provide an important link between the innate and adaptive immune systems. Whether these findings are true '... of mice and men...' remains to be seen.

## THE GRAPES OF WRATH

Steinbeck famously wrote 'There ain't no sin and there ain't no virtue. There is just stuff people do.' in his novel about migrant farmers. There is no doubt that smoking is 'stuff that people do' and grapes are a source of potent anti-oxidants although it is unlikely that this is what Steinbeck had in mind when penning his 1939 classic. Numakura *et al* describe the measurement of the anti-oxidant persulfides that they found to be reduced in the cells and lung lining fluid in patients with COPD (see page 1074). Furthermore, they found increased reactive oxygen species in resident lung cells obtained from patients with COPD indicating an altered Redox balance in patients with COPD. As the migrant farmers found out knowing what the problem is doesn't necessarily mean you know how to fix it, and so we await with interest Redox the Redux.

## THE USUAL SUSPECTS

California was also the setting for the 1995 film 'The Usual Suspects', which describes a gangland massacre, in the Port of Los Angeles. The usual suspects in the cystic fibrosis lung include: *Staphylococcus aureus*, *Haemophilus influenzae* and *Pseudomonas aeruginosa*. The advent of 16S ribosomal RNA gene sequencing has helped us understand that the usual suspects in the CF lung are accompanied by a diverse microbiota. On page 1104 of this month's journal, Frayman *et al* describe the lung microbiota in CF infants identified

by newborn screening and followed up to 6 years. This microbiota includes organisms not commonly seen in lab reports such as Firmicutes, Proteobacteria, Actinobacteria, Bacteroidetes and Fusobacteria. As children get older however, diversity decreases, the usual suspects become the dominant species and inflammation increases. Plus ça change...

## ADD A DASH OF CURAÇÃO...

Pulmonary arteriovenous malformations (PAVMs) affect around 1 in 2600 people. They are commonly due to hereditary haemorrhagic telangiectasia (HHT) - an autosomal dominant condition, traditionally diagnosed using the Curaçao criteria. PAVMs carry a greater than 1 in 4 risk of one of a number of serious outcomes (paradoxical embolic stroke, abscess or myocardial infarction) and, for women, a 1% risk of death in pregnancy. On page 1154 of this edition Shovlin and colleagues provide a BTS 'Clinical Statement' which updates previous clinical guidelines on PAVMs and HHT. There is useful guidance on therapeutic embolization of PAVMs and an accompanying editorial on page 1071. Sadly, no guidance on how to enhance your cocktails with a dash of Curaçao... Barman...!

## 'DOUBLE, DOUBLE TOIL AND TROUBLE...'

Talc, tetracycline and blood might sound like the components of a witch's brew. In fact, they are all agents used in chemical pleurodesis, to prevent recurrent pneumothorax. Halifax and colleagues went to a great deal of 'toil and trouble' to screen over 500 publications to find the 50 which were of sufficient quality to include in their systematic review (see page 1121). They conclude that chemical pleurodesis works. The OR for recurrence, following thoracoscopic talc poudrage is 0.1 vs. drainage alone. However, the trials included do not have sufficient power to determine which works best (singly or in combination) from the options of chemical agents, thoracoscopy and video-assisted thoracic surgery. However, there appears to be no role for 'Eye of newt and toe of frog, Wool of bat and tongue of dog...'

## I WILL SURVIVE

At first I was afraid, I was petrified, I kept thinking I could never live without the ventilator by my side. Then the consultant said 'Well now go, walk out the door, just turn around, you're not needing cardiorespiratory

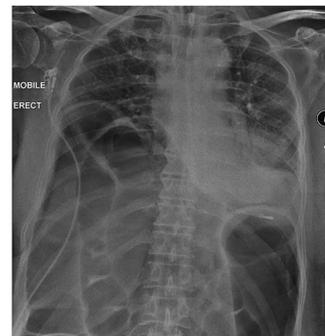
support anymore'. Gloria Gaynor was well aware that survival was not quite the rosy binary outcome that might be imagined following an intense relationship, and now we are beginning to understand that surviving critical illness may have its own complications. S Brown *et al* describes the long-term consequences of surviving ARDS while physical and mental health closely correlated to each other, cognition did not relate to either rown (see page 1094). Furthermore, the degree of impairment was predicted by sex, ethnicity and smoking. As another Sam Brown famously sang in 1998 'You better STOP (smoking) before you go and break your heart (and lungs).

## CALAMATOUS COUGHING

Coughing recently hit the headlines and was associated with nightmares; Brexit; p45's and falling furniture. The cause of Theresa May's cough was put down to viral infection, but asthma is a well recognised cause for coughing, however whether the bronchoconstriction is associated with the cough is not known. Satia and colleagues identified that bronchoconstriction increased cough sensitivity in patients with mild asthma, although coughing itself did not exacerbate bronchoconstriction (see page 1144). Suggesting that bronchoconstriction and cough are not independent and indeed, much like the announcement of the BREXIT result, bronchoconstriction may induce coughing.

## AIR IN THE CHEST BUT NOT IN THE LUNGS...

And if that wasn't enough to give you indigestion, see the image on page 1169 from Ip and colleagues.



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