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Highlights from this issue

The Triumvirate

THE TAMING OF THE SHREW

It may come as some surprise that the hedgehog is a distant relative of the shrew, and even more of a surprise that hedgehogs native to North America are now extinct and have never been present in Australia. However, hedgehog and its signalling pathways are increased in Idiopathic Pulmonary Fibrosis (IPF). In this issue of *Thorax*, Jia and colleagues describe how the chemokine CXCL14 is increased in mice in response to Hedgehog overexpression and is elevated in the plasma from patients with IPF (see page 780). In an effort to tame this shrew a hedgehog inhibitor has been developed and has been shown to inhibit CXCL14 in patients treated with cancer. Therefore, it is hoped CXCL14 can be used as a biomarker to demonstrate whether vismodegib can tame both the shrew and IPF.

THE MERRY WIDOWS OF WINDSOR

Falstaff arrived in Windsor and tried to deceive rich women of the age, not unlike the deceit rested on the lungs by early tumours. However, much like the jealous Mr Ford, the medical community needs to understand the plans of the deceitful lesion, and hence the need to define the optimal screening strategy. Will NELSON sail to the rescue? On page 819, Yousaf-Khan *et al* investigate the outcomes from 7900 patients randomised into the screening group of the NELSON study to identify risk strata and found that patients with a negative scans after 3 rounds of screening had a 0.6% risk of detecting lung cancer after 2.5 years compared with 3.7% in those with indeterminate results. So while the wives may have played some successful tricks on the deceitful Falstaff, one can't assume that the indeterminate lesion has been humbled even after 2 years.

ALL'S WELL THAT ENDS WELL

Many of Shakespeare's plays were set in Italy but only one was set in Tuscany. So Falstaff may have escaped from Windsor but the Italians are also looking to detect deceit within the lung. Paci and all describe the ITALUNG study, a randomised lung cancer screening trial looking at the role of low dose CT screening for lung cancer (see page 825). The results indicated increased detection in stage one lung cancer in the active screening group, but only non-significant trends in mortality. The authors suggest that

the Europeans should pool their efforts to ensure that All's well that end well.

AS YOU LIKE IT

There are many measures of quality of life and many factors that affect them. Being able to escape persecution from her wicked uncle certainly improved Rosalind's quality of life, but how might it have been measured? A similar question has been raised in Primary Ciliary Dyskinesia (PCD) and Behan and colleagues may just have found the answer (see page 832). They undertook psychometric validation of a PCD specific questionnaire in comparison with standard QoL tools including the St Georges Respiratory Questionnaire (SGRQ), Short Form 36 (SF36) and the Sino-Nasal Outcome Test 20 (SNOT-20- yes really!). They found that it was reliable with good internal consistency and may be more specific than asking patients is it As You Like It?

THE CAT WILL MEW, AND THE DOG WILL HAVE HIS DAY...

This line by Hamlet directed towards Hercules highlights that even a dog's time in the limelight will come. Perhaps, Arbillaga-Etxarri and colleagues had considered this when they designed their study investigating novel social factors influencing physical activity in COPD patients in Spain (see page 796). The authors investigated the effect of dog walking and grand-parenting on physical activity in 410 COPD patients from 5 Catalan municipalities. Both dog walking and grand-parenting were associated with increased quantity and intensity of physical activity in COPD patient. Perhaps the dog will finally get his, or her, day.

AN INFECTIOUS STATE...

In late July 1606, in the midst of a theatrical season that included the new plays of *King Lear* and *Macbeth*, Shakespeare's company lowered their flag at the Globe theatre and locked their playhouse doors. Plague had returned. Although Zakharkina and colleagues did not necessarily consider the plague as common in the modern ICU, the authors investigated the relationship between the pulmonary microbiome during mechanical ventilation and the association with ventilator associated pneumonia (see page 803). Tracheal aspirates were collected from patients with and without VAP and

16S rRNA gene sequencing was used to determine the composition of the respiratory microbiome. Duration of mechanical ventilation was associated with a decrease in microbiome diversity but interesting that the administration of antibiotic therapy was not. Dysbiosis of microbial communities was most profound in patients who developed VAP.

HENRY V

'Membrane illa quae cor et pulmonales à jecore et liene dirimit' is the 'membrane which separates the heart and pulmonary veins from the liver and spleen', commonly known as the diaphragm. This is helpful quote from *Henry V* that has guided Dubé and colleagues from Paris in the ultrasound evaluation of diaphragm function in mechanically ventilated (see page 811). The authors investigated the relationship between diaphragm thickness, excursion and thickening fraction and diaphragm 'twitch' function evaluated using the change in endotracheal pressure after phrenic nerve stimulation. Although under assist controlled ventilation diaphragm thickness, excursion and thickening fraction were not correlated with twitch diaphragm function, under pressure support ventilation thickening fraction was correlated with diaphragm strength and both of these predicted further requirement for mechanical ventilation as well as ICU and hospital death. Malheureux!

...AND FINALLY THE TRAGEDY PLAYS...

The year is 1616. William Shakespeare and Chinese playwright Tang Xianzu have just died. Four hundred years on, and the similarities between the China and the UK, in terms of air pollution, are now somewhat different. Sha Liu and colleagues investigated the relationship between exposure to ambient particulate matter and COPD in China (see page 788). 5993 subjects were randomly selected from four cities across Guangdong province with atmosphere sampling conducted. The authors observed that COPD prevalence was associated with elevated particulate matter concentration levels with PM2.5 concentrations associated decline in FEV1. We better hope we can steer away from any real-life tragedies.

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