airwaves

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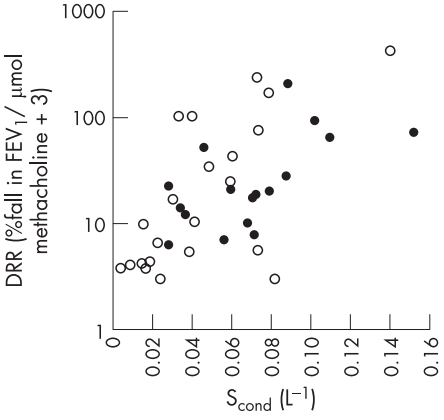
VENTILATION HETEROGENEITY AND AIRWAY HYPERRESPONSIVENESS

Airway hyperresponsiveness (AHR) is an important feature of asthma and has been linked to lung ventilation heterogeneity. In this issue, Downie and colleagues report on a study to establish whether this ventilation heterogeneity is associated with AHR, but independently of airway inflammation. Results showed that baseline ventilation heterogeneity is a strong predictor of AHR and independent of airway inflammation in asthma. After treatment with inhaled steroids, the relationship persisted and this suggests that normalisation of ventilation heterogeneity could be an outcome of asthma treatment. In the accompanying editorial, Venegas discusses the basis for these interesting findings and concludes that these novel results open up new clinical and basic research avenues to study relationships between ventilation heterogenity and AHR.

See p 653 and 684



Conductive airway ventilation heterogeneity (S_{cond}) correlates with AHR (log DRR) at baseline ($r = 0.63$, $p\ 0.001$). Closed circles represent those who participated in the inhaled corticosteroid treatment study and open circles represent those who did not.

DIAGNOSTIC SERVICE FOR CILIARY DYSKINESIA

Primary ciliary dyskinesia (PCD) is an autosomal recessive condition with an incidence of 1:15 000 in the Caucasian population and higher incidence in ethnic groups where cosanguineous partnerships are more common. I recommend the editorial by O'Callaghan and colleagues in this month's *Thorax*, which describes an English national diagnostic service for children and adults with PCD. Three centres have been funded to provide the service that will include diagnostic testing. The editorial describes that earlier diagnosis will improve outcome and also there is information on who should be referred. A national database will be set up which will facilitate clinical trials of new treatments for PCD.

See p 656

VEGF GENE IN ARDS

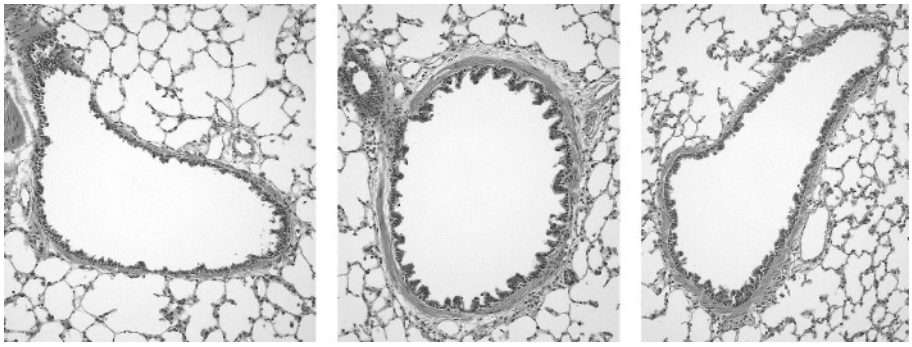
As Zhai and colleagues point out in this month's *Thorax*, the pathogenesis of acute respiratory distress syndrome (ARDS) is poorly understood, although outcome of ARDS depends on alveolar epithelial and vascular endothelial injury. Vascular endothelial growth factor (VEGF) plays an important role in endothelial destruction and angiogenesis and VEGF polymorphisms affect VEGF production. Zhai and colleagues report on three VEGF polymorphisms studied in 1253 patients with risk factors for ARDS in an intensive care unit. The results show that these polymorphisms can contribute to the increased mortality in some of the patients with ARDS and also to the inter-individual variations observed in VEGF levels.

See p 718

MMP INHIBITORS, EMPHYSEMA AND AIRWAY REMODELLING

Matrix metalloproteinases (MMPs) are considered to be important in the pathogenesis of smoke-induced emphysema, although studies of MMPs have been performed mainly in mice. Churg and colleagues report on a study of an MMP-9/MMP-12 inhibitor on the lungs of guinea pigs exposed daily to cigarette smoke for up to 6 months. For the first time, the authors show that MMPs play a role in the development of emphysema in a species other than the mouse. They report that the inhibitor substantially reduced morphological emphysema and small airway remodelling. Function was also improved after treatment with the inhibitor. The authors conclude that these results suggest that MMPs are also likely to be important mediators of emphysema and remodelling in humans and should be targeted by interventions.

See p 706



Representative images of control, smoke-exposed and AZ11557272-treated animals at 6 months showing a representative membranous bronchiole. Smoke increased bronchiolar wall thickness (that is, produced small airway remodelling) and this was prevented by AZ11557272.