

Abstract winners 2016: summaries

This prestigious Award recognizes Professor Kay's national and international research contributions to the field of allergy and asthma, which have inspired so many young Allergists and Chest Physicians.



Adult clinical
Dr Guy Scadding
Imperial College,
London

Grass pollen Subcutaneous and Sublingual immunotherapy inhibit allergen-induced nasal and skin responses: a randomised controlled trial

We conducted a randomised, double-blind, placebo-controlled trial of subcutaneous and sublingual grass pollen immunotherapy using response to nasal allergen challenge as the primary outcome. Participants were assessed at baseline, after 1 and 2 years of treatment, then again at 3 years, after 12 months off treatment. The primary comparison was SLIT versus placebo at year 3, answering the question of whether 2 years treatment was sufficient to induce lasting tolerance. We also measured nasal cytokines and intradermal allergen responses.

We found that two years SCIT or SLIT was effective at suppressing allergen challenge-induced nasal responses and local Th2 cytokines, but these effects were not maintained after one year off treatment. Conversely, suppression of skin responses persisted for at least one year following treatment discontinuation.



Basic science
Iesha Singh
Imperial College,
London

Surfactant Protein D (SP-D): A Novel Therapeutic target for suppressing Grass Pollen-induced Th2 and B Responses in Seasonal Allergic Rhinitis

Lung surfactant protein SP-D is a soluble pattern recognition innate immune molecule. Ken Reid and Uday Kishore (Oxford), and Taruna Madan (Delhi) were the first to show that a recombinant form of SP-D (rhSP-D) caused a marked reduction in specific IgE and IgG1 levels, along with blood and pulmonary eosinophilia, in a murine model of allergic bronchopulmonary aspergillosis. In a collaborative effort between Imperial College London (M Shamji and Stephen Durham) and Brunel University London (Uday Kishore) we have shown, for the first time, that rhSP-D inhibited grass pollen allergen-induced basophil response at a single cell level, suppressed CD23-mediated facilitated allergen presentation and Th2 cytokine production, and inhibited IgE synthesis by B cells. Our study makes a compelling case for rhSP-D as a potential immunomodulator for Th2 mediated allergic inflammation.



Allied health
Rosalyn Gourgey
St Thomas'
Hospital, London

When is it safe to recommend home nut/seed introduction for children who are allergic to at least one nut/seed?

Selective nut/seed introduction rather than a blanket ban is gaining momentum for children with nut/seed allergy. Often this requires oral food challenge in hospital. Data from nut/seed allergic children in the Pronuts study was analysed for safe home based introduction (HBI) thresholds.

Skin prick test (SPT) and sIgE results for 11 nuts/seeds in 50 children were assessed against allergy/tolerance. Three threshold criteria were tested; 1) SPT=0mm and sIgE<0.1 kUA/l 2) sIgE<0.1 kUA/l 3) SPT=0mm.

90 cases (17%) from 546 potential outcomes, met the combined HBI criteria with tolerance to 11 nuts/seeds. For sIgE<0.1 kUA/l, 142 cases met the criteria with all tolerant. For SPT=0mm there were 217 cases with seven (3%) allergic reactions requiring one to three doses of antihistamine.

These data support using SPT=0mm and sIgE<0.1 kUA/l for safe HBI of nuts/seeds and sIgE<0.1 kUA/l alone. For SPT=0mm, risk of allergic reaction is greater and requires careful clinical judgement.



Primary care
Rory Mercer
Brighton and
Sussex Medical
School

Reviewing the content of anaphylaxis management plans in English-speaking countries

We conducted a systematic search of the general internet to identify as many anaphylaxis management plans published online as possible. We then iteratively developed a data collection form to extract characteristics about the content and design of plans, particularly looking at the core elements of symptoms to recognise and actions to take. In total, we identified 41 individual plans and assessed for the presence of 121 characteristics per plan. Unexpected findings included 45% of plans not instructing patients on how to use their auto-injectors and less than one in five plans including first aid advice on patient positioning that is recommended by guidelines. No plans included all the elements recommended by a previous e-Delphi study. Plans available online are broadly homogenous in design but differ in content, meaning that practitioners have a choice to make in deciding whether a particular plan design is suitable for their individual patient.



Paediatric clinical
Patricia Soares
Brighton and
Sussex Medical
School

Children and young adults with filaggrin-related eczema may have different healthcare needs than filaggrin-unrelated eczema

A longitudinal analysis was performed to understand whether filaggrin (FLG) gene defects are associated with increased prescribing for eczema and asthma and a higher number of asthma exacerbations. BREATHE, a cohort of gene-environment associations with asthma severity, was linked to routine healthcare databases such as Accident & Emergency, community prescribing and Scottish Morbidity Records (hospital admissions). This linkage allows exploration of associations between genetic variation and prescribing. A significant and strong association (Incidence Rate Ratio IRR higher than 2) was found between FLG mutations and prescribing of emollients (IRR: 2.36, 95% CI: 1.44-3.57), treatment for severe eczema (IRR: 2.27, 95% CI: 1.31-3.93) and a combination of long-acting β_2 -agonist and corticosteroids (IRR: 3.33, 95% CI: 1.74-6.37). Defining subgroups of individuals who may require more prescriptions could help predict treatment costs and develop targeted management strategies.



Undergraduate
Catherine Arthur
Brighton and
Sussex Medical
School

Behavioural interventions to improve adherence to preventer medications in children and adolescents with asthma: a systematic review

Non-adherence to preventer medications in asthma remains a common problem among children. This systematic review and meta-analysis examined the characteristics and effectiveness of behavioural interventions for promoting preventer medication adherence in paediatric asthma. Fourteen randomised control trials were identified that met the inclusion criteria. A variety of behavioural approaches to enhancing adherence were described including electronic reminders, web-based interventions, and objective monitoring of adherence with feedback to the participant. Pooled data from 12 studies demonstrated a significant benefit of interventions containing behavioural components on adherence (OR=2.09, 95%CI=1.33,3.29). Sensitivity analysis of two studies that assessed solely behavioural interventions did not find a significant effect on adherence (OR=3.75, 95%CI=0.56, 25.08). To conclude, multicomponent interventions containing behavioural components were found to have a beneficial effect on adherence to preventer medications in paediatric asthma. Further high quality RCTs with clearly reported interventions are needed to determine features of interventions associated with the most benefit in this population.