

**P17 SELF-REPORTED PHYSICAL ACTIVITY LEVELS AND ATTITUDES TOWARDS A STRUCTURED EXERCISE PROGRAMME IN ADULTS WITH DIFFICULT ASTHMA**

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**Background** Patients with difficult-to-treat asthma often have dyspnoea which limits their physical activity. This may lead to progressive deconditioning which may further hamper exercise capacity. We aimed to assess current levels of activity, perceptions of current fitness and interest in a structured exercise programme in patients attending the Glenfield Hospital Difficult Asthma Clinic.

**Method** Patients completed the General Practice Physical Activity Questionnaire which provides a simple Physical Activity Index (PAI) and answered structured questions about their satisfaction with current fitness and their interest in participating in an exercise programme. They were also asked to rate their current fitness compared to peers of the same age on a 100 mm visual analogue score. Responses were compared to demographic details and markers of asthma severity and control.

**Results** Sixty patients participated (37 female, mean (SD) age 53(13)). Only 15/60 (25%) was classified as 'active' by the PAI. There were no significant differences in age, gender, body mass index or Juniper asthma control scores between those patients who were active compared to the remaining group but active patients had less severe airflow obstruction (post-bronchodilator FEV<sub>1</sub> 83.7(16.5)% predicted vs 68.7(21.8), p=0.04) and better self-reported fitness scores (55.3 (27.4) vs 36.7(23.0), p=0.013). There was a statistically significant inverse correlation between fitness scores and Juniper asthma control scores (r = -0.5, p<0.0001) and Hospital Anxiety (r=-0.4, p=0.004) and Depression scores (r=-0.4, p=0.001) but no association with age, BMI or FEV<sub>1</sub>. 65% of patients reported that they had stopped exercising due to their asthma symptoms and 86.7% of patients wanted to be fitter. 71.7% were interested in participating in an exercise programme. Of these 13 (30%) preferred a hospital setting with the remainder preferring a community scheme or an independent programme with support from healthcare professionals.

**Conclusion** Many patients with difficult asthma reported concerns about their current fitness and most were not exercising at the recommended level. There appears to be a demand for the development of a community-based structured exercise programme and further work is needed to determine whether this would improve asthma related outcomes for this group of patients.

**P18 EXPERIMENTAL INFECTION WITH LOW DOSE RHINOVIRUS IN ASTHMA**

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Viral respiratory tract infections are important triggers for exacerbations of asthma and have been found in the majority of wheezing episodes in both children and adults. Of the respiratory tract viruses identified in these circumstances, rhinoviruses are most commonly found. Experimental human models of rhinovirus infection offer great potential for improving our understanding of virus-induced airway inflammation and offer significant opportunity for improved disease management in asthma. Thus far, human experimental infection studies in asthma have used high doses of virus inoculums (10 000 TCID<sub>50</sub>). Using a low dose would better mimic the natural course of infection and in allow a more representative inflammatory response to be studied.

In this pilot study, five mild-moderate atopic asthmatic subjects and five non-asthmatic healthy controls all with negative RV-16

serology were infected with 10 TCID<sub>50</sub> RV16. The aim was to establish whether this low dose was suitable for future experimental infection studies. Daily morning peak flow, FEV<sub>1</sub> and symptom scores were recorded until day 10 following inoculation. Nasal lavage for viral load was obtained on day 0, 3, 4, 5, 6, 7 and 10 and measured using Taqman.

**Results** 3/5 atopic asthmatic and 3/5 healthy volunteers developed the subjective feeling of a common cold associated with objective evidence of RV16 in their nasal lavage. The three asthmatic subjects also developed lower respiratory symptoms along with an average fall in their peak flow of 86.7l/min (15.1%) in keeping with an exacerbation. None of the healthy volunteers developed lower respiratory symptoms or had any change in their lung function measurements.

**Conclusion** Low-dose RV16 challenge is sufficient to induce clinical signs of an asthma exacerbation in a majority (60%) of asthmatic subjects. A higher dose of virus such as 100 TCID<sub>50</sub> will more likely result in a larger proportion of subjects clinically infected whilst still allowing a more natural course of infection to develop. It is possible that factors other than negative RV16 serology at screening are important determinants of who becomes infected with rhinovirus. Further research is needed to identify what these factors may be.

**P19 PSYCHOSOCIAL FACTORS AND THE MORBIDITY OF SEVERE ASTHMA**

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**Aim** To examine if psychosocial variables; ie, personality, ways of coping, locus of control, levels of anxiety and depression and levels of social deprivation, could predict levels of lung function and numbers of exacerbations in severe asthma.

**Methods** Participants all had severe asthma. Data on numbers of exacerbations was collected retrospectively over an 8-year period and levels of lung function assessed (FEV<sub>1</sub>% predicted and FEV<sub>1</sub>/FVC% predicted. Predictor variables measured using EPQ (personality), HADS (anxiety and depression), MHLOC (locus of control), WCC (ways of coping) and an individual social deprivation score. Standard multiple regression analysed the relationship between these predictor variables and the criterion variables of levels of lung function and numbers of exacerbations.

**Results** N=102 from a severe asthma clinic in the midlands. High levels of depression and moderate levels of social deprivation showed significant relationships to high numbers of exacerbations (R<sup>2</sup>=0.458, Beta value=0.636, p=0.009 and R<sup>2</sup>=0.581. Beta value=0.280, p=0.009 respectively). No relationship was found between the predictor variables and level of lung function.

**Conclusion** There are predictor variables which have a significant influence on the morbidity of severe asthma, which cannot be treated by conventional management techniques. Further work needs to be done to explore these variables and to develop management strategies for them in people with severe asthma.

**P20 THE ELIGIBILITY OF PATIENTS WITH DIFFICULT ASTHMA FOR OMALIZUMAB SINCE THE CHANGE TO THE TREATMENT CRITERIA**

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Omalizumab is a humanised monoclonal anti-IgE agent which is useful as an add-on therapy for severe atopic asthma. We have previously shown that 13.5% of patients attending our adult