Mouldy houses influence symptoms of asthma among atopic individuals

The original paper contains 1 sections, with 10 passages identified by our machine learning algorithms as central to this paper.

Paper Summary

SUMMARY PASSAGE 1

Introduction

Season was a signiÂ®cant predictor of both ergosterol and viable airborne fungal propagules in this study, hence it may have confounded the association between indicators of fungal exposure and asthma. Therefore, we carried out a cohort study over 1 year to more closely examine the association between fungal exposure and asthma among sensitized subjects. Our aims were: .

SUMMARY PASSAGE 2

Subjects

This was a follow-up study to the European Community Respiratory Health Survey (ECRHS) in Melbourne, for which the sampling procedures have already been published [18]. All participants with current asthma and sensitization to fungi in 1996 were invited to participate in this longitudinal study.

SUMMARY PASSAGE 3

Diary Cards

Participants were provided with PEF meters (Allersearch, Melbourne, Australia) and trained to record the highest of three peak expiratoryÂ¯ow rates twice a day on waking each morning and at bedtime. Daily peakÂ¯ow variability (PFV) was deÂ®ned as the difference between morning and evening PEF on each day, expressed as a percentage of the higher Â®gure [22].

SUMMARY PASSAGE 4

Measurement Of Cumulative Fungal Levels InÂ¯Oor Dust

The fungal membrane lipid ergosterol was assessed as an indicator of total fungal biomass in dust samples, using a modiÂ®cation of the technique of Martin et al. [25], the details of which we have already published [3]. Results were expressed as mcg ergosterol/g of Â®ne dust.

SUMMARY PASSAGE 5

Measurement Of Total And SpeciÂ®C Fungal Levels In The Air

Cladosporium, Alternaria, Epicoccum, Penicillium and Aspergillus, were identiÂ®ed based on colony and spore morphology. All the other colonies were aggregated into one group as others'. Levels of airborne fungi were expressed as number of colony forming units per cubic meter of air (CFU/m 3).

SUMMARY PASSAGE 6

Analysis

The Statistical Analytical System package [26] and STATA [27] were used to analyse the data. The distributions of viable airborne fungal propagule counts, ergosterol levels, Der p 1 levels, PFV and symptom scores were positively skewed. Log transformation normalized the distributions of total fungal propagules, Cladosporium, other fungal propagules, ergosterol, Der p 1 and PFV.

SUMMARY PASSAGE 7

Characteristics Of The Study Sample

The prevalence of`attacks of asthma' was highest in winter (Fig. 1). However, only the seasonal variation in PFV was statistically signiÂ®cant (P 0.05). Paradoxically, there was hardly any variation in the use of reliever medication for asthma across seasons.

SUMMARY PASSAGE 8

Seasonal Variation In Fungi And Der P 1

Aspergillus was positively correlated with ergosterol (r 0.3, P 0.04) in summer. Aspergillus was negatively correlated with Cladosporium (r Ã€ 0.3, P 0.01) in autumn. Viable fungal propagules and ergosterol levels were not correlated with current visible mould, visible mould during the past 12 months or visible mould ever, and these Â®ndings were consistent across the seasons.

SUMMARY PASSAGE 9

The InÂ¯Uence Of Indoor Fungi On The Clinical Activity Of Asthma

The levels of total fungi, speciÂ®c genera or ergosterol did not have any signiÂ®cant relationship to PFV (Table 4). Der p 1 levels were not related to PFV, symptom scores or medication use, even among people who were sensitized to house dust mites.

SUMMARY PASSAGE 10

Discussion

Alternatively, this may also be related to the differences between the two areas in home construction or proximity to substrate on which fungi can grow. The severity of asthma was greater in autumn and winter in this sample of current asthmatics, but only the association between PFV and season was statistically signiÂ®cant. Clinically signiÂ®cant magnitude of changes in PFV is not well deÂ®ned, but 6% PFV has been suggested to correspond to mild asthma, with an increased PFV correlating with increased severity [31].