S91 FUNGAL SENSITISATION AND BRONCHIECTASIS IN A SEVERE ASTHMA CLINIC

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10.1136/thoraxjnl-2013-204457.98

Aims Allergic bronchopulmonary aspergillosis (ABPA) and Severe asthma with fungal sensitivity (SAFS) are well recognised in the severe asthma population. Sensitisation to other moulds has also been described. Defined radiological, immunological, and physiological features are associated with these conditions. We describe these features within a severe asthma population, identifying radiological airway abnormality and the association with fungal sensitisation, airway obstruction and immunological markers.

Methods Retrospective database analysis of referrals to a severe/difficult asthma service with comparison of radiological, immunological and physiological features in patients with severe refractory asthma (SRA), with and without fungal sensitivity (FS).

Results (table1) 141 patients with SRA, defined according to ATS criteria, were identified. 67 patients (47.5%) had an abnormal CT scan; the most common abnormalities being bronchial wall thickening (38.8%), bronchiectasis (28.3%) and mucus plugging (2.9%). 35 patients (24.8%) demonstrated fungal sensitisation (FS), 30 to *Aspergillus fumigatus* and 5 to "mould mix". All patients, regardless of fungal sensitivity (FS) demonstrated a strongly eosinophilic phenotype with IgE, ENO and blood eosinophil levels of 1450.03 kU/L, 47.36 ppb and 0.95 x10⁹ for those with FS and 387.88 kU/L, 59.96 ppb and 0.8x10⁹L, for those without FS. Consistent with a diagnosis of SRA obstructive spirometry was seen across both groups with post bronchodilator FEV1:FVC ratios of 0.57 (FS) vs 0.62 (SRA) CT appearances most commonly associated with fungal sensitisation were bronchial wall thickening (22.9%) and bronchiectasis (34.3%). In the presence of bronchiectasis and fungal sensitisation equal incidence of proximal and distal disease distribution was observed. Division of those with fungal sensitivity into ABPA, allergic bronchopulmonary mycosis (ABPM), defined according to criteria by Agrawal *et al*, SAFS and severe asthma without fungal

sensitisation also demonstrated further differences (figure 1). Bronchiectasis was seen most frequently in those with SAFS and of the patients with ABPA and ABPM all patients had a serological diagnosis apart from 2 where peripheral bronchiectasis was demonstrated.

Conclusions In this population SRA is characterised by a strongly positive eosinophilic phenotype, airflow obstruction and a high prevalence of radiological abnormality regardless of FS. FS is associated with bronchiectasis even when diagnostic criteria for ABPA are not met.

S92 NEBULISED AMPHOTERICIN IN ALLERGIC BRONCHOPULMONARY ASPERGILLOSIS (ABPA) AND SEVERE ASTHMA WITH FUNGAL SENSITISATION (SAFS)

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10.1136/thoraxjnl-2013-204457.99

Background and Rationale Allergic bronchopulmonary aspergillosis (ABPA) and severe asthma with fungal sensitisation (SAFS) are debilitating lung diseases whose treatment is not yet fully established. Some published case series suggest that nebulised amphotericin may have a role in the treatment of cystic fibrosis ABPA but little is known regarding its appropriateness in asthmatic ABPA and SAFS patients. We assessed the efficacy and safety of nebulised Amphotericin as second and third line therapy.

Methods 20 adult asthmatics with SAFS (n = 11) and ABPA (n = 9) were treated with nebulised amphotericin (January 2011- May 2013). All patients had either failed itraconazole (n = 8), voriconazole (n = 5) or developed adverse events (AEs) to either agent (n = 7). 10mg of Nebulised amphotericin B (Fungisone) was administered using a nebulizer twice/day. We audited clinical, radiological and immunological response, including change in the Asthma Quality of Life Questionnaire (AQLQ-J) scores. We also examined Asthma Control Questionnaire (ACQ) scores, change in lung function (FEV1), change in IgE (total and specific) and healthcare utilisation. Patients were followed up for 12 months.

Abstract S91 Table 1.

	ABPA (n=12) 1 bronchiectasis, 11 seropositive	ABPM (n=5) 1 bronchiectasis, 4 seropositive	SAFS (n=18)	SRA no FS (n=106)
Female	8 (67%)	3 (60%)	12 (67%)	63 (59%)
Age at Diagnosis yrs	9.3	8.4	17	23.6
Asthma duration yrs	30	23.6	42	26.5
FEV1	64.7%	73.4%	56.5%	67.2%
FEV1 / FVC	62	64	53	62
Residual Volume (% predicted)	180	139	163	135
KCO (% predicted)	96%	86%	86%	97%
IgE kU/L	2664	2402	378	389
FeNO ppb	44.7	54	47	60
Blood EØ x10 ⁹ /L	0.93	0.68	1.03	0.8
Oral prednisolone mg/d	3.75	6.0	5.0	6.2
LTOS therapy	9 (75%)	1 (20%)	10 (56%)	47 (44%)
Bronchiectasis	1 (8%)	1 (20%)	10 (56%)	6 (6%)