

Correspondence

Is the “probable” category required in the diagnosis of ABPA?

To the Editor:

Allergic bronchopulmonary aspergillosis (ABPA) lacks a commonly accepted diagnostic standard. The study by Asano et al¹ is an excellent attempt to refine the existing criteria. They provide a new standard, which outperforms the current benchmarks (Rosenberg-Patterson and International Society for Human and Animal Mycology [ISHAM] ABPA Working Group criteria). Interestingly, we have also recently evaluated the existing criteria and proposed certain modifications using latent class analysis.² Although there are several common features to the modified

ISHAM criteria and the criteria by Asano et al, there are key differences. The striking difference is the high rate of identifying fungal hyphae (68%) by Asano et al, compared with 4% in our study. Notably, in their study, Asano et al performed bronchoscopic sampling in 97% of the cases where they isolated fungi. Although bronchoscopy is acceptable as a part of a research protocol, it is not warranted in clinical practice. Alternatively, high-volume sputum cultures or molecular methods to identify the fungus in sputum may be useful.³ The second difference of the newly proposed criteria is the applicability to allergic bronchopulmonary mycosis and ABPA sans asthma, which is commendable because none of the previous criteria have addressed these aspects.

TABLE I. MDT evaluation of probable ABPA cases not classified as ABPA by either modified ISHAM criteria or definite ABPA by the Asano et al criteria

S. No.	Age (y)	Sex	AST	Total IgE	<i>A fumigatus</i> IgE	<i>A fumigatus</i> IgG	TEC	Sputum fungus	CB	HAM	Mucoid impaction	First MDT diagnosis	Second MDT diagnosis
1	46	Male	Negative	861	28.5	26	200	Negative	Present	Absent	Present	Bronchiectasis with Aspergillus sensitization	Inactive ABPA
2	53	Female	Negative	92	0.02	121	450	Negative	Present	Absent	Present	Bronchiectasis with Aspergillus infection	—
3	37	Female	Positive	452	0.03	35.6	510	Negative	Absent	Absent	Absent	Asthma with fungal sensitization	—
4	25	Male	Negative	407	0.03	45.1	590	<i>A fumigatus</i>	Present	Absent	Present	Bronchiectasis with Aspergillus infection	—
5	39	Female	Positive	252	80	78.8	510	Negative	Present	Absent	Absent	Inactive ABPA	—
6	52	Female	Negative	551	0.07	39.3	100	Negative	Present	Absent	Absent	Bronchiectasis with Aspergillus infection	—
7	31	Male	Positive	632	17.1	22	90	Negative	Present	Absent	Absent	Bronchiectasis with Aspergillus sensitization	Inactive ABPA
8	26	Male	Negative	212	4.26	25.9	300	<i>A fumigatus</i>	Present	Absent	Present	Bronchiectasis with Aspergillus sensitization	Inactive ABPA
9	38	Male	Positive	612	19.4	26.4	420	Negative	Present	Absent	Present	Bronchiectasis with Aspergillus sensitization	Inactive ABPA
10	30	Female	Positive	611	0.15	32	500	Negative	Present	Absent	Absent	Bronchiectasis with Aspergillus infection	—
11	19	Female	Negative	832	0.04	11	500	<i>A fumigatus</i>	Present	Absent	Absent	Bronchiectasis with Aspergillus colonization	—
12	37	Male	Positive	545	0.08	200	560	Negative	Absent	Absent	Absent	Asthma with fungal sensitization	—
13	27	Male	Positive	811	0.07	200	580	Negative	Absent	Absent	Absent	Asthma with fungal sensitization	—
14	24	Male	Negative	718	0.27	3.84	900	<i>A fumigatus</i>	Absent	Absent	Absent	Asthma with Aspergillus colonization	—
15	24	Male	Negative	193	1.55	99.9	600	Negative	Absent	Absent	Absent	Asthma with fungal sensitization	—
16	40	Female	Positive	170	8.36	45.2	500	Negative	Present	Absent	Absent	Bronchiectasis with Aspergillus sensitization	Inactive ABPA
17	33	Female	Positive	712	3.99	46	267	Negative	Absent	Absent	Absent	Asthma with fungal sensitization	—
18	49	Female	Positive	471	2.87	42.8	800	Negative	Present	Absent	Present	Bronchiectasis with Aspergillus sensitization	Inactive ABPA
19	52	Male	Negative	820	0.59	23.9	700	<i>A fumigatus</i>	Absent	Absent	Absent	Asthma with fungal sensitization	ABPA-S
20	54	Male	Negative	141	0.94	94.3	720	Negative	Absent	Absent	Absent	Asthma with fungal sensitization	ABPA-S

ABPA-S, Serological allergic bronchopulmonary aspergillosis; AST, Aspergillus skin test; CB, central bronchiectasis; HAM, high-attenuation mucus; MDT, multidisciplinary team; TEC, total eosinophil count.

We also compared the newly formulated criteria by Asano et al (definite ABPA) and the modified ISHAM criteria proposed by us. We found 94 and 96 subjects to have ABPA by the Asano et al and the modified ISHAM criteria,² respectively, in our cohort of 543 subjects with asthma,² suggesting that both the criteria were similar in their performance.

The Japanese group has further suggested a category of “probable ABPA.” We identified 122 cases of probable ABPA in our cohort. Of these, 20 were not identified by either the “definite ABPA” criteria of Asano et al or the modified ISHAM criteria,² and a multidisciplinary team evaluated them (Table I). We defined *Aspergillus* sensitization as *Aspergillus fumigatus*-specific IgE level more than 0.35 kUA/L or a positive *Aspergillus* skin test result.⁴ *Aspergillus* infection was defined as *A fumigatus*-specific IgG level more than 27 mgA/L without *Aspergillus* sensitization, and *Aspergillus* colonization was defined as the growth of *A fumigatus* in the sputum without *Aspergillus* sensitization or infection.⁵ The multidisciplinary team evaluation classified these 20 cases as bronchiectasis with *A fumigatus* sensitization (n = 6), asthma with *A fumigatus* sensitization (n = 6), bronchiectasis with *A fumigatus* infection (n = 6), bronchiectasis with *A fumigatus* colonization (n = 3), and inactive ABPA (n = 1). A few of these 20 cases might have been classified as ABPA by the other criteria if any of the dynamic immunologic parameters (eosinophil count or total IgE) was elevated, whereas some of them (n = 9 [45%]) were misclassification because they lacked allergic sensitization to *A fumigatus* (*A fumigatus* IgE < 0.35, and a negative *Aspergillus* skin test result). Importantly, all the patients had well-controlled asthma, and in these cases, diagnosing ABPA without sensitization to *A fumigatus* would be incorrect.

We believe that the inclusion of probable ABPA may dilute the validity of the criteria. Intuitively, the lower the number of

components (5 of 10 components to diagnose probable ABPA) higher will be the sensitivity; however, there is a risk of more false positives and unnecessary treatment. Furthermore, categorizing ABPA as either probable or definite ABPA does not have therapeutic implications. Only definite ABPA (6 of 10 components) should be retained to maintain high specificity.

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