CONCLUSIONS

The rapidity, simplicity and sensitivity of basogranulin-based methods for measuring basophil activation will facilitate their application to clinical samples and allow better assessment for allergic sensitivity.

OC05

BAT with molecular allergens of *Aspergillus spp.*: from extract to molecules to enhance diagnosis of allergic broncho-pulmonary aspergillosis

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BACKGROUND

Allergic bronchopulmonary aspergillosis (ABPA) is an underestimated allergic disease due to Aspergillus fumigatus (Af). The main diagnostic criteria for ABPA rely on the evaluation of humoral immunoglobulins (Ig) IgE and IgG responses to Af extracts, although these cannot discriminate Af-sensitization from ABPA. Basophil activation test (BAT) is a suitable ex vivo functional test for allergy diagnosis. Previous studies have demonstrated the performance of BAT with Af extract for ABPA diagnosis, with a high optimal positive cutoff. We hypothesize that BAT with Af molecular allergens can improve BAT performance in ABPA context.

METHODS

A monocentric prospective cohort study was conducted in patients at risk of ABPA. BAT with Af extract was performed in 67 patients. In 9 patients with a positive BAT to Af (3 ABPA and 6 non-ABPA), we performed a BAT with each of the 5 following molecular Af components (for which specific IgE quantification is available): Asp f 1, Asp f 2, Asp f 3, Asp f 4 and Asp f 6. For each patient, five concentrations of molecular components from 100 to 0,01 ng/mL by 10-fold dilution were used. BAT was performed with the Bühlmann CD193/CD63 Flow2CAST kit (Schönenbuch, Switzerland). Molecular Af components were obtained from Thermo Fisher R&D (Uppsala, Sweden).

RESULTS

BAT with Af extract with an optimized positive cutoff presents a sensitivity of 100% and a good specificity (77.6 %). In 9 positive BAT to Af patients, mean basophil activation responses to each Af molecular components was higher in ABPA than no-ABPA. However, only BAT with Asp f 4 was significantly higher in ABPA patients at 101 ng/mL (10.56 of basophil stimulation index in ABPA group vs 1.24 in no ABPA group, $p = 0.0002$).

CONCLUSIONS

BAT with Aspergillus spp. molecular allergens can improve BAT performance in the context of suspected ABPA. We found a significant association between BAT to Asp f 4 and ABPA diagnosis, in agreement with previous studies which had shown an association between IgE to Asp f 4 and ABPA. Our study suggests that (i) immune responses to Asp f 4 might be a sensitive marker for ABPA and (ii) allergic sensitization to Asp f 4 may be involved in the pathophysiology of ABPA. Further studies are needed to investigate BAT with molecular Af components, and Asp f 4 involvement in the host–Af crosstalk.

OC26

The impact of a Clinical Decision Support System on allergen immunotherapy prescription in children and adults with seasonal allergic rhinitis

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BACKGROUND

Allergen immunotherapy (AIT) represents currently the only disease-modifying treatment with long-term effects in patients with seasonal allergic rhinoconjunctivitis (SAR). Its efficacy depends on the precise identification of the pollen triggering the patient's symptoms. However, the "traditional diagnostic approach", based on retrospective clinical history and sensitization to extracts, results inaccurate. This study aims to assess the effectiveness and usability of a recently established clinical decision support system (CDSS) and its tools (including component resolved diagnosis, CRD, and real-time digital symptom recording, eDiary) in order to improve the accuracy of AIT prescription.

METHODS

After a preliminary concise educational training on the CDSS and its diagnostic tools (questionnaires, SPT, CRD, eDiary), 46 doctors expressed their own AIT "virtual prescription" referred to 10 clinical index cases and then their opinion on the benefits of the CDSS and its diagnostic tools and their respective role in their own decision' making.

RESULTS

The measurement of serum IgE to allergenic molecules and the use of an eDiary significantly increase the number and the accuracy of AIT prescription, both among allergy specialists and general practitioners ($p < .01$). All physicians considered the application of a CDSS useful and recognized its potential in ameliorating the traditional diagnostic procedures.

CONCLUSIONS

By implementing the "traditional" diagnostic approach with CRD and real-time digital symptom recording (eDiary), the allergen(s) to be used for AIT in SAR patients could be identified with high precision, and more patients could benefit of AIT. Furthermore, though the AIT prescription remains a doctor's decision, the proposed algorithm may usefully support physician during the diagnostic procedure.

A clinical decision support system involving CRD and eDiary can improve the diagnostic and therapeutic precision of doctors in the clinical routine significantly.

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OC27

Basophil activation test is a useful tool for Hymenoptera venom immunotherapy follow-up

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