



EAACI Hybrid Congress

Madrid - Krakow
10-12 July 2021

EAACI.org #EAACI2021



#539 - MOLECULAR SENSITIZATION PROFILE TO GRASS AND OLIVE POLLENS IN PORTUGAL

Cosme, Joana / Spínola-Santos, Amélia / Pedro, Elisa / Pereira-Santos, Maria Conceição / Lopes, Anabela / Caiado, Joana / Paulino, Marisa / Tomás, Elza / Farinha, Sofia / Matos, Eulália / Pinela, Andreia / Jacinto, Hunilla / São-Braz, Maria Antónia / Ribeiro, Filipa / Paes, Maria João / Santos, Natacha / Rodrigues-Carvalho, Susana / Duarte-Ferreira, Ruben / Todo-Bom, Ana / Regateiro, Frederico / Botelho-Alves, Pedro / Môte, Ana / Falcão, Helena / Cunha, Leonor / Falcão, Inês / Neves, Esmeralda / Plácido, José Luís / Silva, Diana / Vasconcelos, Maria João / Silva, Rui / Abreu, Carmo / Ferreira-Horta, Alice / Martins, Susana / Lozoya-Ibáñez, Carlos / Paulos-Viegas, Leonor / Morais-Silva, Pedro / Nogueira, Célia / Costa-Viana, Jorge / Borrego, Luís Miguel / Cruz, Cintia / Piedade, Susana / Forstenlechner, Peter / Aumayr, Martina / Pineda, Fernando

Background

Grass and Olive tree pollens are important allergens in Portugal. **Aim:** to analyze component resolved diagnosis (CRD) in patients with respiratory allergic disease sensitized to *Phleum pratense* and *Olea europaea*.

Method

Seasonal allergic rhinitis (AR) patients (≥ 12 years) from 16 allergy centers in Portugal (Coast=126/Inland=49; North=51/Center=36/South=88) without previous AIT, and positive SPT (DIATER, Madrid, Spain) to both pollens were included. CRD to Phl p1, Phl p2, Phl p5, Phl p6, Phl p7, Phl p12, Ole e1, Ole e7, Ole e9 were determined by ALEX² (MacroArrayDX, Wien, Austria) and values ≥ 0.3 kUA/L considered positive. Statistical analysis using SPSS v22.

Results

Included 175 patients (44.6% male, 85.7% adults) with a mean age of 31.6 ± 13.3 years. All with AR (60% persistent moderate-severe), 71.4% had conjunctivitis, 39.7% asthma, 22.9% eczema and 15.4% food allergy. As for *Phleum* sensitization, Phl p1 was found in 85.7%, Phl p2 in 45.7%, Phl p5 in 50.3%, Phl p6 in 45.7%, Phl p7 in 10.9% and Phl p12 in 22.9% with median levels of 9.3, 6.3, 30.9, 6.9, 15.2 and 1.8 kUA/L, respectively. Sensitization to Phl p7 was more frequent in asthmatic than in non-asthmatics (17.4% vs 6.6%; $p=0.044$). There were no differences regarding age or AR severity. Sensitization to Phl p5 (67.3% vs 43.2%; $p=0.0037$), Phl p6 (63.3% vs 38.9%; $p=0.003$), Phl p12 (38.8% vs 16.7%; $p=0.003$). No significant differences were found between regions North, Center and South. Among *Olea* allergic patients Ole e1 was found in 56.6%, Ole e7 in 1.7% and Ole e9 in 3.4% with median IgE levels of 3.7, 1.2 and 25.1 kUA/L, respectively. No significant differences between *Olea* CRD and age group, disease severity or regions North/Center/South. Sensitization to Ole e1 (69.4% vs 51.6%; $p=0.041$) was more frequent in the Inland. IgE sensitization to both *Phleum* (Phl p1 and/or Phl p2 and/or, Phl p5 and/or Phl p6) and *Olea* (Ole e1) was found in 53.1%. Molecular CRD patterns are shown in table 1.

Conclusion

CRD showed “genuine” Grass and *Olea* sensitization in 53.1% of the patients with positive SPT to both pollens. Sensitization to *Phleum* was higher in the Inland and Phl p7 more frequent in asthmatic patients. Ole e1 was the main allergen with a predominance in the Inland, probably related to the intensive cultivation of Olive trees in this region. CRD is important to identify sensitization patterns in double Grass and *Olea* sensitized patients and might help to guide AIT selection.

Table 1 – Molecular sensitization patterns

CRD patterns	n (%)
Double sensitization to <i>Phleum</i> and <i>Olea</i> species' specific IgE*	93 (53.1%)
Phl p1 and/or Phl p2 and/or Phl p5 and/or Phl p6 + Ole e1	60
Phl p1 and/or Phl p2 and/or Phl p5 and/or Phl p6 + Ole e1 + Ole e9	3
Phl p1 and/or Phl p2 and/or Phl p5 and/or Phl p6 + Ole e1 + Phl p7	6
Phl p1 and/or Phl p2 and/or Phl p5 and/or Phl p6 + Ole e1 + Phl p12	20
Phl p1 and/or Phl p2 and/or Phl p5 and/or Phl p6 + Ole e1 + Ole e9 + Phl p12	2
Phl p1 and/or Phl p2 and/or Phl p5 and/or Phl p6 + Ole e1 + Ole e7	1
Phl p1 and/or Phl p2 and/or Phl p5 and/or Phl p6 + Ole e1 + Ole e7 + Ole e9	1
Sensitization to <i>Phleum</i> species' specific IgE*	67 (38.3%)
Phl p1 and/or Phl p2 and/or Phl p5 and/or Phl p6	40
Phl p1 and/or Phl p2 and/or Phl p5 and/or Phl p6 + Phl p7	8
Phl p1 and/or Phl p2 and/or Phl p5 and/or Phl p6 + Phl p12	16
Phl p1 and/or Phl p2 and/or Phl p5 and/or Phl p6 + Phl p7 + Phl p12	2
Phl p1 and/or Phl p2 and/or Phl p5 and/or Phl p6 + Ole e7	1
Sensitization to <i>Olea</i> species' specific IgE*	6 (3.4%)
Ole e1	5
Ole e1 + Phl p7	1
Ole e9	0
Sensitization only to cross reactivity IgE	2 (1.1%)
Phl p 7	2
No CRD (None of the studied sIgE)	7 (4%)

* with or without associated cross-reactivity allergens (Phl p7, Phl p12, Ole e7)