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458 | **Allergenic pollen and fungal spores: Overlapping or separate exposure seasons in allergy sufferers across Europe?**

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Background: Pollen-induced allergic rhinitis affects around 25–30% of the European population, whilst estimates of fungal sensitization is around 10–15%. Depending on the geographical region, pollen and fungal spore seasons may differ in their timing, however in some areas they may partially overlap causing an increased risk of a multi-allergen exposure for allergic individuals. The main aim of our study was to determine the spatial patterns of season timing and the frequency of co-occurrence of airborne pollen and fungal spores in Europe.

Method: Daily concentrations of major allergenic pollen (birch, grass, mugwort, ragweed, olive) and fungal spores (*Alternaria*, *Cladosporium*) at 17 sites, covering different climatic zones, recorded during 2005–2019 were analyzed. Thresholds to determine 'high pollen and fungal spore exposure days' varied depending on the taxa. Pollen thresholds were defined according to the EAACI definition for clinical trials as birch and olive, 100 Pollen/m^3/day and grasses, mugwort and ragweed, 50 Pollen/m^3/day. For *Alternaria* and *Cladosporium* spores, 100 and 3,000 Spores/m^3/day, respectively, were used; values most frequently cited as clinically relevant. The frequency and timing of periods when pollen and fungal spore levels were above the defined thresholds were evaluated. To investigate the relationships between climatic conditions and 'high exposure' days (per year and site), when *Alternaria* and *Cladosporium* both exceeded the pre-determined thresholds, 19 bioclimatic parameters were considered.

Results: At sites from Central and North Europe, overlapping pollen and spore seasons in June and July prevailed, with only spores remaining airborne towards the end of the vegetation periods. In Southern Europe, pollen grains occur frequently outside of spore seasons. In colder climates, no pollen or spore thresholds are exceeded simultaneously by two spore or pollen taxa. In contrast, the highest number of days when at least two pollen taxa exceed allergy thresholds occurs in the Mediterranean Basin. Among the bioclimatic parameters, the range of annual temperature seems to be the main factor influencing the accumulation of days in which *Alternaria* and *Cladosporium* spores simultaneously exceed allergy thresholds.

Conclusion: Airborne pollen and spore allergens co-occur commonly in Europe, especially in temperate climates. In cold and warm regions the pollen seasons occur separately with the spore concentrations below the threshold risk values for allergic individuals.

84 | **External factors of sensitization of patients with bronchial asthma and seasonal allergic rhinitis in the rostov region of Southern Russia**

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Background: According to epidemiological data on the prevalence of allergic diseases in Rostov and the Rostov region of Southern Russia, a special place is occupied by allergic rhinitis, which further burdens patients with bronchial asthma.

In this regard, to date, the greatest interest is, as the evaluation of data component diagnostics, so the study of qualitative and quantitative levels of allergenic pollen and fungal spores in the air using palynological analysis.

Aim. In a study over the past year in patients suffering from seasonal allergic rhinitis and bronchial asthma, the profile of sensitization was studied.

Method: The methods were as follows: physical methods of examination, molecular diagnostics of allergen extracts by Phadia IDM «ImmunoCAP-100», impact-volumetric trap «Burkard Pollen Trap».

Results: 671 patients were examined, of which 0.35 and more results were revealed:w230 (n Amb a 1) 85 people – 13.0%; w 231 (n Art v1) 60 people-8.9%m 229 (r Alt a 1) 78 people -11.6%; g 213 (r Phl p1/r Phl p 5b) 51 people -7.6 %; t 215 (r Bet v 1) 24 people-3.6%. g 214 (r Phl p 7/r Phl p 12) 6 people — 0.9%; t 213 (r Bet v 2/r Bet v 4) 2 people – 0.3%. It should be noted that Alt a 1 – the main allergen of Alternaria-is associated with the development of asthma.