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Regional Specifics of fungal sensitization in Ukraine

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Due to the lack of modern diagnostic methods, fungal allergy remains an underdiagnosed and undertreated disease, the reasons for which are not always well-understood. Thus, the aim of our work was to analyze the specifics of regional sensitization to fungal allergens in Ukraine in order to improve control of this disease.

To achieve this goal, a dataset of 20 033 patients tested with component-resolved molecular Alex2 test was used. Patients lived in 17 out of 25 regions of Ukraine.

It was established that sensitization to fungal allergens varied from 7,69 % of tested individuals in the Transcarpathian region (Western region Ukraine) to 22,99% (Center) and 22,82% (North-East) in Vinnytsia and Kharkiv regions, respectively. The third highest rate of sensitive patients (21,42 %) was in the Dnipro region (East of Central Ukraine). Low levels of fungal sensitization, instead, were recorded in other Western regions like Lviv (9,57 %), Ivano-Frankivsk (12,3%) and Rivne (12,35 %). In such a Northwestern region like Zhytomyr, sensitization to fungi was not determined at all. Southern regions, located at sea, where sensitization to fungal spores can be expected due to high humidity, held the 6th (Mykolaiv, 18,18 %), 7th (Odesa, 17,79 %) and 9th (Kherson, 17,00 %) positions respectively.

Sensitization to *Alternaria* was the most significant among all fungal sensitization. Rates of Kharkiv (18,88 % of tested individuals), Dnipro (18,29 %) and Mykolaiv (18,18 %) prevailed here. There were the lowest in Western Ukraine: 7,77 % in Ivano-Frankivsk, 5,61 % in Lviv and 1,92% in Transcarpathia.

Thus, clear regional patterns of fungal sensitization are seen in Ukraine, with its prevalence in Central and Northeast regions and with the lowest rates of such sensitivity in Western regions of Ukraine. Southern regions were in the middle by the levels of general fungal sensitization and on the top (Mykolaiv) in terms of sensitivity to *Alternaria* – the main factor of fungal allergy in Ukraine.

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