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#501 - Features of wheat allergen sensitization in type 2 diabetics with asthma

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Background

The effect of hyperglycemia on the level of allergic sensitization to wheat in asthma (As) patients with type 2 diabetes mellitus (DM2T) was assessed.

Method

22 subjects with severe As with DM2T were studied who had a history of allergic dermatitis and As exacerbation after ingestion of foods containing wheat flour. FVC, FEV₁, total (IgE) and assessment for "Wheat" rTri a 19 (Omega-5 Gliadin) IgE (f416) and rTri a 14 IgE (f433) (LTP) were done.

Results

Subjects were 43.21 years old; duration of As was 9.32 years. High sensitization to wheat occurred in 19 cases; in 2 cases - sensitization to the wheat allergens was not detected. The wheat sensitization was distributed as follows: 14 patients - omega-5 gliadin (Tri a 14) with an average of 14.3 kUA/L; 5 patients - omega-5 gliadin (Tri a 19) was 5.12 kUA/L and IgE omega-5 gliadin (Tri a 14) was 3.01 kUA/L, respectively; and 2 patients -no allergic sensitization to the studied wheat antigens. Importantly the rTri a 14 is a CCD-free recombinant protein belonging to lipid transfer proteins (LTPs) which can cause allergic reactions by ingestion, skin contact and inhalation of wheat flour. A positive correlation was obtained in patients with sensitization to wheat f416 and f433 between the level of hyperglycemia and the level of sensitization to these food allergens $r=0.69$ ($p<0.001$) and a negative relationship with FEV₁ $r=-0.42$ ($p<0.05$).

Conclusion

Impaired glucose tolerance in asthma patients having type 2 diabetes with wheat sensitization appears to be related to the level of sensitization wheat LTPs and is correlated to low lung function.