Effect of modified immunotherapy with an allergen-pullulan conjugate in patients with Japanese cedar pollinosis

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Immunologic mechanisms of allergen immunotherapy are still incompletely understood. Immunotherapy of a higher maximum tolerance dose with reduced risks of systemic reactions, such as anaphylaxis, needs to be developed. Seasonal allergic rhinitis (SAR) is a type I allergic disease characterized by typical seasonal symptoms of rhinitis and an increase in mast cells and T helper (Th) 2-type cells, as well as tissue eosinophilia. The present study was designed to investigate the effect of a modified immunotherapy (IT) with an allergenpullulan conjugate (CS-560) in patients with SAR to Japanese cedar pollen (Japanese cedar pollinosis) using objective parameters, such as analyzing the alteration in the proportion of effector cells like mast cells, eosinophils and T cells, and the Th2 and Th1 cytokine profile. We also analyzed the efficacy of modified IT on the severity of symptoms, using subjective parameters, such as the symptommedication score. Immunotherapy for 15 months duration with the modified drug CS-560 in patients with Japanese cedar pollinosis induced an immune deviation from a Th2- to a Th1-type cytokine profile and inhibited the in-season increase in the proportion of intraepithelial mast cells and eosinophils. These changes were associated with a reduction in the symptommedication score. These data suggest that this modified IT with an allergen pullulan conjugate (CS-560) is an effective mode of treatment of patients with Japanese cedar pollinosis.

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