Increased Osteopontin Levels in Children Undergoing Venom Immunotherapy May Serve As a Marker of Clinical Efficacy


PURPOSE OF THE STUDY. The authors measured changes in plasma osteopontin (OPN) and serum basal tryptase (sBT) in children undergoing 1 year of bee or wasp venom immunotherapy (VIT).

STUDY POPULATION. Children with a history of large local reactions (n = 18) or systemic reactions (n = 24) after wasp or bee stings were recruited for this Turkish study. They were matched to 16 controls who had a history of a sting but no adverse reactions.

METHODS. Study patients were identified through clinical history and allergy testing to wasp and bee venom. Serum biomarker measurements were performed before start of VIT and 6 and 12 months after it was started.

RESULTS. Plasma OPN levels from children who experienced large local reactions were significantly higher than those with SR and healthy control subjects. A significant increase in plasma OPN and interleukin-10 levels was determined after the 1 year of VIT. sBT of children with systemic reactions were significantly higher than those with large local reactions and controls. There was no significant change in sBT levels nor venom serum immunoglobulin E after 1 year of VIT.

CONCLUSIONS. There were higher baseline levels of OPN in children with LLR. Rising serum interleukin-10 while on VIT in the study patients indicate successful immune modulation. Increased OPN levels after 1 year of VIT suggests OPN may be a useful biomarker for assessing immune tolerance.

Network Meta-analysis Shows Commercialized Subcutaneous and Sublingual Grass Products Have Comparable Efficacy


PURPOSE OF THE STUDY. To compare the efficacy of 3 modalities of allergen immunotherapy (subcutaneous immunotherapy, sublingual immunotherapy tablets, and sublingual immunotherapy drops) in the management of grass pollen allergies.

STUDY POPULATION. There were 7759 total patients, including children and adults, from 37 randomized controlled trials were included in the meta-analysis.

METHODS. A literature review identified 37 randomized controlled trials for analysis. Of these studies, 14 involved sublingual immunotherapy tablets, 14 involved sublingual immunotherapy (SLIT) drops, and 9 involved subcutaneous immunotherapy (SCIT). Data were collected on symptom and medication scores for the first pollen season after initiation of treatment and were limited to grass pollen extracts only. An indirect comparison of the different treatment modalities was performed in a Bayesian framework design.

RESULTS. Symptom scores were lower in all treatment modalities compared with placebo. In adults, there was no difference between the treatment modalities in terms of symptom score, but in children, sublingual immunotherapy tablets were shown to have lower symptom scores compared with sublingual immunotherapy drops. There was no significant difference seen between the treatment modalities for medication scores.

CONCLUSIONS. All treatment modalities have been shown to reduce symptom and medication scores in grass pollen allergy when directly compared with placebo. Indirect comparisons among subcutaneous immunotherapy, sublingual immunotherapy, tablets, and sublingual immunotherapy.