Evaluation of peanut tolerance after one year of sublingual immunotherapy with LTP (Pru p 3) in allergic patients sensitized by Ara h 9

Francisca Gomez¹, Gador Bogas¹, Cristobalina Mayorga², Paloma Campo¹, Maria Salas¹, Miguel Gonzalez², Dolores Ruiz¹, Maria Jose Rodriguez², Ana Prieto¹, Domingo Barber³, Maria Jose Torres¹

¹Allergy Unit, IBIMA-Regional University Hospital of Malaga, Spain; ²Research Laboratory, IBIMA-Regional University Hospital of Malaga, Spain; ³Institute for Applied Molecular Medicine (IMMA), School of Medicine, Universidad CEU San Pablo, Madrid, Spain

Rationale: In Southern Europe most peanut allergic patients are sensitized to Ara h 9, with Pru p 3 being the primary sensitizer and responsible for severe reactions. Specific immunotherapy (SIT) brings a new perspective to treat those patients however little is known whether specific SLIT to one allergen, i.e. Pru p 3, can affect sensitization and allergy to other plant-derived foods as peanut. The aim was to evaluate the effect of sublingual immunotherapy (SLIT) with Pru p 3 to peanut in allergic patients with systemic symptoms, because Ara h 9 sensitization.

Methods: In a group of 36 patients with LTP-Syndrome treated with Pru p 3-SLIT 12 patients had peanut allergy, 11 were sensitized but tolerated peanut intake and 9 had no allergy or sensitization to peanut (Group C) confirmed by skin test, ImmunoCAP IgE and/or a double-blind placebo-controlled food-challenge (DBPCFC). After one year of treatment we evaluated peanut tolerance with DBPCFC. Levels of specific IgE and IgG4 to Pru p 3 and Ara h 9 were measured before and after 1, 6 and 12 months of SLIT.

Results: Seven patients (58.3%) presented mild anaphylaxis and five (41%) moderate anaphylaxis. The DBPCFC was performed in 12 patients who completed the first year of SLIT. Seven 58.3% (N=7) patients had good tolerance to the completed dose (14.5 gr of peanut), three patients (25%) tolerated double dose and 2 patients (16%) presented an allergic reaction. After 6 month of SLIT we observed a significant decrease of sIgE to Pru p 3 (p=0.002), Ara h 9 (p=0.003) and a significant increase of sIgG4 to Pru p 3 (p=0.004) and Ara h 9 (p =0.004)

Discussion: These results showed that a high percentage of patients with clinical symptoms to peanut can tolerate this food after receiving SLIT with Pru p 3 during one year. Moreover, these patients showed a significant decrease of sIgE to Ara h 9 and an increase of sIgG4 to Ara h 9 after 1 year of treatment.

Conclusion: These data demonstrate both clinical and immunological changes after the first year of treatment with Pru p 3 SLIT, not only to peach but also to other food allergens as peanut.