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Safety startup of a high-dose cluster subcutaneous immunotherapy in allergic children under 5 years old
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Introduction
Allergen-specific subcutaneous immunotherapy is an effective therapy for the treatment of IgE mediated diseases inducing a state of clinical tolerance. The cluster induction therapy allows the maintenance dose to be reached in less time through sequential doses in the same day or several days. Data on the safety startup of high-dose cluster subcutaneous immunotherapy (CSI) in allergic children under 5 years old is scarce. The main objective of this study was to determine the incidence (I) of systemic reactions (SRs) and associated risk factors during the startup CSI in allergic children under 5 years old.

Methods
Observational retrospective study of one year (2017-2016) in patients ≤ 5 years of age who received the startup CSI (1 or 2 days) at the immunotherapy unit of this Hospital. The studied variables were: SRs according to EAACI classification, age, sex, body mass index (BMI), specific IgE (CAP), vaccine type, therapeutic indication, step of asthma treatment according to GEMA 4.1 and antecedents of asthma exacerbations per year. Data was analyzed statistically using Pearson Chi-squared test and cross-tables.

Results
A total of 104 injections with different extracts: 82 (81.6%) allergoids and 22 natives (18.4%) were applied to 38 sensitized pediatric patients, 19 boys (50%), age x:4.4 years (2-5 years); with allergic asthma and/or allergic rhinitis (21, 15 and 2 patients). The principal sensitization was Dermatophagoides Pteronyssinus (86.8%); 4 mild to moderate SRs were registered (EAACI SRs SCORE ≤ II), all of them by mites; I: 10.52% per patient, I: 3.85% per injection. All the SRs occurred after the second allergoid injection. The patients with SRs were: 75% girls, had a median total IgE 452UI/ml, step of asthma treatment ≥ 3 (100%), 4.5 asthma exacerbations per year and BMI x:17.17kg/m2. The CAP levels were higher in patients with SRs (p=0.006). All SRs were well developed within concomitant rescue medications in the immunotherapy unit. All patients received the full cumulative induction dose.

Conclusions
The startup of a high-dose CSI is a safe procedure for children ≤ 5 years old (I: 10.52% per patient, I: 3.85% per injection). A risk factor for SRs in these allergic children was higher CAP levels to Dermatophagoides Pteronyssinus (x: 97.33KU/L).