



The clinical effect of vitamin D supplementation combined with grass-specific sublingual immunotherapy in children with allergic rhinitis

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Abstract:

Background:

An important issue in sublingual immunotherapy (SLIT) is how to improve efficacy.

Objective:

To compare the clinical efficacy of SLIT with vitamin D supplementation with placebo in children with allergic rhinitis. Secondary end points included lung function, exhaled nitric oxide concentration, methacholine bronchial provocation test, and serum level of calcifediol (25[OH]D).

Methods:

Fifty children, ages 5-12 years, sensitive to grass pollen, with allergic rhinitis (eight patients had concomitant asthma) participated in a 5-month prospective, randomized, double-blind, placebo-controlled trial. Children received a 5-grass pollen sublingual 300 IR tablet with either vitamin D 1000 IU daily supplementation or placebo.

Results:

When compared with the placebo group, SLIT plus vitamin D group therapy was more effective in the reduction of nasal symptoms ($p = 0.04$), asthma symptoms ($p = 0.001$), and the combined symptom-medication score ($p = 0.001$); there was no significant difference between the groups in medication and ocular scores. We observed a significant improvement of forced expiratory volume in 1 second (vitamin D group, $p = 0.014$; placebo group, $p = 0.015$) and the proportion of a person's vital capacity expired in the first second of forced expiration levels (vitamin D group, $p = 0.004$; placebo group, $p < 0.001$), within both groups, between visits. Fractional exhaled nitric oxide and provocative dose producing a 20% fall in forced expiratory volume in 1 second results did not statistically significantly differentiate the study participants in terms of receiving SLIT along with vitamin D or placebo. We showed a significant increase in calcifediol in the SLIT plus vitamin D group as well as in SLIT plus placebo group.

Conclusions:

Vitamin D supplementation combined with grass-specific SLIT was more effective in the reduction of nasal and asthma symptoms. Vitamin D supplementation combined with SLIT provides an effective and well-tolerated new immunotherapy modality for treating children with allergic rhinitis. A 5-grass pollen sublingual 300 IR tablet was effective in both studied groups and also in children with comorbid mild asthma.

References: 23 references [□ open in new window](#)

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