ABSTRACT: The allergen-induced release of mediators from basophils is known to be decreased after rush venom immunotherapy (VIT) compared with pretreatment values. A rise in the intracellular cyclic adenosine monophosphate (cAMP) level is known to inhibit mediator release. OBJECTIVES: To determine changes in cAMP levels in peripheral blood leukocytes (PBLs) during rush VIT and to evaluate their relation to allergen-specific reactivity of basophils. METHODS: Ten patients allergic to vespid venom (VV) were investigated before rush VIT and after reaching the maintenance dose. Five VV-allergic patients not undergoing VIT served as controls. Patients’ PBLs were incubated with VV, and allergen-induced histamine and leukotriene release from basophils was measured. Levels of cAMP were determined in PBLs and in plasma. RESULTS: Immediately after rush VIT, VV-induced histamine release (P = .04) and VV-induced leukotriene release (P = .01) were significantly reduced. Intracellular cAMP levels increased significantly (P = .047). However, 6 months after VIT, mediator responses in basophils were comparable with pre-VIT values. No significant changes were found in the control group. CONCLUSIONS: An increase in intracellular cAMP levels might account for the decreased reactivity of basophils to allergen after 1 week of VIT. However, similar to the decreased mediator release after 1
week of VIT, this is not a long-term effect as values returned to baseline after 6 months.