Both genetic and acquired pathomechisms lead to barrier defects and a type 2 helper (Th2) polarization of immune responses in most patients with atopic dermatitis. Topical therapy of atopic dermatitis is essentially aimed at reconstitution of the disturbed skin barrier and the reduction of local cutaneous inflammation (eczema reaction). A targeted therapy on the basis of current knowledge of the pathogenesis of atopic dermatitis is currently being investigated in adults, whereby the aim is a correction of the excessive "unspecific" Th2-associated inflammatory mechanisms which subsequently can also correct the disrupted skin barrier. This review focusses on these new developments. Currently, the only approved drug available for the systemic therapy of atopic dermatitis in adults is cyclosporine; however, based on current data from published studies, azathioprine, methotrexate and mycophenolate mofetil or mycophenolic acid can be administered off-label. Some biologics on the market that have been approved for other indications (e.g. ustekinumab, rituximab and tocilizumab) have been successfully used in a few adult patients with atopic dermatitis. The worlds first prospective controlled studies with the biologic human anti-IL4R antibody dupilumab for the indication atopic dermatitis were published in 2014. These motivated (1) extension of the studies with dupilumab and (2) clinically testing antagonization of other target
molecules of Th2-polarized, atopic inflammation, e.g. interleukin (IL)-13, IL-31, IL-22, thymic stromal lymphopoetin (TSLP), histamine 4 receptor, neurokinin 1 receptor, phosphodiesterase 4 and the chemoattractant receptor-homologous molecule expressed on Th2 cells (CRTH2). A number of clinical trials are currently recruiting in this field and will provide interesting new insights for future therapeutic approaches to atopic dermatitis.