Retinal vein occlusion and the risk of stroke development: a five-year follow-up study

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摘要

Abstract

Background: Glycoproteins containing Lewis-x (Lex) trisaccharides are often associated with the host's adaptive TH2-type immunity, but the mechanisms underlying the TH2-biased response are at present unclear. Objective: The modulatory effect of Lex or its glycoconjugates on IgE/TH2 responses was investigated. Methods: The levels of serum antibodies and cytokines were analyzed by means of ELISA, RT-PCR, or both. Results: In C3H mice Lex coupled with BSA (Lex-BSA) elicited higher levels of specific IgE and IgG1, but not IgG2a, which were associated with increased levels of splenic TH2 cytokines when compared with those seen in BSA-sensitized mice. In BALB/c mice sensitized with Lex-BSA or Lex mixed with ovalbumin, significantly increased levels of specific IgE and IgG2a antibodies were found concomitant with reduced levels of serum IL-12p70. These effects were attenuated in IL-12− deficient BALB/c mice. Lex and an isomer, Ley, but not other isomers, inhibited the production of LPS-induced IL-12p70, associated with a significant reduction of nuclear NF-kB, in bone marrow−derived dendritic cells from BALB/c mice, suggesting that Lex-induced suppression of IL-12p70 results in an enhanced TH2 response. The addition of mannan, a known ligand for dendritic cell−specific intercellular adhesion molecule 3−grabbing nonintegrin, abrogated the suppressive effect of Lex trisaccharides. Conclusion: These results provide evidence for a potential role of Lex trisaccharides in shaping the immune responses through, at least in part, its suppressive effect on IL-12p70 production. Considering the relative ubiquity of glycoproteins with Lex or similar oligosaccharides, including plant-derived (or food-derived) allergens, these findings might have a broad implication. Clinical implications: The adjuvant activity of Lex trisaccharides might aid in vaccine design and might be important in determining the allergenicity of proteins containing this or other similar structures. (J Allergy Clin Immunol 2007;119:1522-8.)