The Role of Interleukin-4 and Interleukin-13 in the Pathogenesis of Minimal Change Nephrotic Syndrome

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Minimal Change Nephrotic Syndrome(MCNS) is one of the most common renal disease in children characterized by proteinuria, hypoalbuminemia, hyperlipidemia and edema. In MCNS patients without any allergic disease, serum IgE levels are significantly increased. and peripheral blood mononuclear cells spontaneously produce IgE and is closely related to disease activity. We have reported that peripheral B cells of patients with childhood MCNS express elevated levels of type II IgE receptor(FC ε RII), and that their T cells induce higher levels of Interleukin(IL)-4 mRNA expression than those of normal and disease controls, which in turn correlated well with elevated serum IgE, soluble FC ε RII and membrane FC ε RII. However mRNA expression levels of Interferon(IFN)- γ were similar among MCNS, normal and disease controls. Recently IL-13 is identified which also induce IgE, however the effect of IL-13 on PBL of MCNS is not reported. We compared the induction activity of CD23 by IL-4 and IL-13 on tonsillar B cells were compared, which showed increased mean fluorescence intensity(MFI) by flow cytometry by dose dependent manner in IL-4 and IL-13, however IL-4 was more pronounced. To study whether the increased CD23 MFI are due to IL-4 or IL-13, we added anti IL-4 and anti IL-13 and compared the inhibition effect, which showed conflicting results. Interestingly IL-4 were related to atopy history and IL-13 was not. Although further controlled studies are needed to confirm, increased IgE in MCNS might be controlled not only by IL-4 but also IL-13 depends on the history of atopy.