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Diabetologia

Letter to the editor

Increased interleukin-12 plasma concentrations in both, insulin-dependent and non-insulin-dependent diabetes mellitus

Dear Sir,
The pathogenetic role of the Th 1 type inflammatory cytokine interleukin-12 (IL-12) in insulin-dependent diabetes mellitus (IDDM) of the non-obese diabetic (NOD) mice has repeatedly been emphasized by Rothe et al. [1, 2] and others [3]. Moreover IL-12 proved to be a potent inhibitor of angiogenesis [4].

Theoretically genetically lower IL-12 level might be a predisposing factor for the development of diabetic retinopathy. Alternatively, elevated IL-12 levels can be a consequence of the retinopathic complication in diabetes as a part of the consecutive immunological mechanism.

Therefore we have studied plasma IL-12 levels in Caucasian (Hungarian) patients, 15 of them with IDDM (age $\bar{X} \pm$ SE years, 36 ± 2.8, male/female 7/8) and 35 with non-insulin-dependent diabetes mellitus (NIDDM, 58 ± 1.2 years, 19/16) with and without diabetic retinopathy, as well as in 30 healthy blood donors (55 ± 2.1 years, 16/14). Quantikine ELISA kit (R&D Systems, Minneapolis, Minn. USA) recognizing only the 75 kDa heterodimer, not cross-reactive with the individual subunits of the dimer was used for the IL-12 determination. Blood samples were collected from a cubital vein, using EDTA-coated tubes. Elevated IL-12 plasma levels were detected in both types of diabetes (IDDM: $\bar{X} \pm$ SE, pg/ml 2.40 ± 0.16, NIDDM: 2.35 ± 0.10, $p < 0.01$) as compared to healthy control subjects (1.86 ± 0.07). Higher IL-12 levels were found in patients with diabetic retinopathy (background and proliferative as well) both in IDDM (2.53 ± 0.14) and NIDDM (2.63 ± 0.16, $p < 0.02$) as compared to those without retinopathic complications (IDDM: 2.25 ± 0.10, NIDDM: 2.08 ± 0.10, Fig. 1). We could not find any significant correlation between plasma IL-12 levels and duration of the disease, neither in IDDM, nor in NIDDM.

Beside its emphasized role in the pathophysiology of IDDM, IL-12 may also contribute to the pathogenesis of the diabetic retinopathy more likely as a part of the consecutive immunological response mechanisms rather than a predisposing factor.

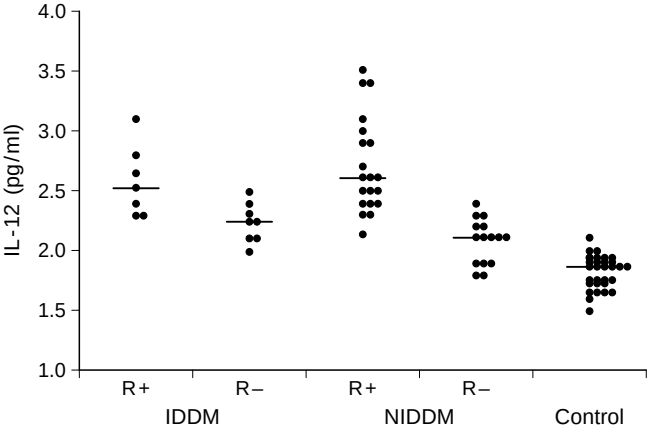

Fig. 1. Individual plasma IL-12 levels in diabetic patients with and without retinopathy and controls

Yours sincerely,
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