Detection of Serum IL-6 in Patients with Diabetic Nephropathy

K.	Keiko	Sekizuka
Y.	Yasuhiko	Tomino
C.	Chizuko	Sei
A.	Atsushi	Kurusu
K.	Kyoichi	Tashiro
Y.	Yoshihiro	Yamaguchi
S.	Sanki	Kodera
T.	Toshimasa	Hishiki
I.	Isao	Shirato
H.	Hikaru	Koide

Division of Nephrology, Department of Medicine, Juntendo University School of Medicine, Tokyo, Japan

Yasuhiko Tomino, MD, Division of Nephrology, Department of Medicine, Juntendo University School of Medicine, 2-1-1 Hongo, Bunkyo-ku, Tokyo 113 (Japan)

Dear Sir,

A study on the detection of serum IL-6 in patients with non-insulin-dependent diabetes mellitus (NIDDM) with or without nephropathy is described. IL-6 is generally regarded as a multifunctional cytokine which has a variety of biological activities, including the ability to stimulate bone marrow stem cell proliferation, B cell differentiation, immunoglobulin secretion, T cell activation, and acute phase protein synthesis [1, 2]. IL-6 is also produced by the renal glomerular mesangial cells. Cytokines are known to play an important role in autoimmunity and appear to be involved in the pathogenesis of insulin-dependent diabetes mellitus (IDDM). However, Cavallo et al. [3] reported that detectable levels of serum IL-6 were observed in only 10% of IDDM patients. Serum samples were obtained from 9 patients with NIDDM with nephropathy (diabetic nephropathy), 9 patients with NIDDM without nephropathy and 29 patients with chronic glomerulonephritis (CGN). NIDDM was diagnosed with a 75-gram glucose tolerance test. Patients with diabetic nephropathy continuously showed more than 200 mg/24 h. Serum IL-6 levels were measured with ELISA as described previously [4]. Mouse monoclonal anti-IL-6 antibody (HH61-10) and monoclonal horse radish peroxidase-conjugated anti-IL-6 antibody (HH61-2 Fab') were used in a double-antibody sandwich ELISA [5]. Levels of serum IL-6 of healthy controls were less than 4.0 pg/ml [5]. The mean levels of serum IL-6 in all patients with NIDDM were significantly higher than those in patients with CGN ($p < 0.05$). The levels of serum IL-6 in patients with diabetic nephropathy were significantly higher than those in cases of CGN or NIDDM without nephropathy ($p < 0.01$ and $p < 0.05$, respectively; table 1). It appears that the presence of IL-6 in the patients' sera may reflect increased localized production of this cytokine at the pancreatic and/or glomerular mesangial levels. The measurement in serum IL-6 may add

information on the role that it may play in the pathogenesis of NIDDM, especially diabetic nephropathy.

Table 1. Levels of serum IL-6 in patients with NIDDM with or without nephropathy and CGN

Values represent mean $\pm$ SE. $p < 0.05$, vs. CGN; $p < 0.01$, vs. CGN; $p < 0.05$, vs. NIDDM without nephropathy.

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