Serum Interleukin-15 Levels are not Elevated in Patients with Stage I and II Mycosis Fungoides

Sir,

Interleukin-15 (IL-15) is a newly described cytokine that was first characterized from the culture supernatants of a simian kidney epithelial line, CV-1/EBNA (1). IL-15 shares with IL-2 the ability to bind to the β- and ψ-chains of the IL-2 receptor complex and to stimulate the growth of CD4+ and CD8+ T cells (1). Recently, IL-15 was found to be a growth factor for the Sezary cell line SeAx and immunohistological analyses of skin biopsy samples of Sezary syndrome and mycosis fungoides (MF) patients showed immunoreactivity for IL-15 in basal cell layer keratinocytes and infiltrating lymphocytes (2). Therefore, we measured serum IL-15 levels in patients with MF and examined whether they can be a marker for the disease activity of MF.

MATERIAL AND METHODS

Serum samples were obtained from 10 patients affected with MF (5 males and 5 females; mean age 63±7 years; range 50–73 years). The diagnosis of MF was established by clinical and histopathological examinations. The clinical stages of the patients were as follows: stage Ia, 4 cases; stage Ib, 4 cases; and stage IIb, 2 cases [TNM classification (3)]. Ten healthy age- and sex-matched subjects served as controls, after giving their informed consent. IL-15 concentrations in serum samples were measured using ELISA kits (Genzyme, Cambridge, MA). Serum levels of soluble IL-2 receptor (sIL-2R) were also measured using ELISA kits (Yamanouchi Co., Tokyo, Japan) in some patients. The normal range of sIL-2R levels in our institution is 167–497 pg/ml.

RESULTS

Serum IL-15 levels were not elevated in the patients (mean 94.2±53.1 pg/ml; range 15.7–195.7 pg/ml) compared with the controls (mean 89.5±46.7 pg/ml; range 0–195.7 pg/ml) ($p = 0.81$) (Table I). Clinical stage, history of PUVA therapy, epidermotropism of tumor cells and sIL-2R levels had no association with serum IL-15 levels. We also measured serum IL-15 levels in 2 stage IIb patients after therapy. In 1 patient, serum IL-15 levels decreased (from 102.0 pg/ml to 66.5 pg/ml) as the skin lesions disappeared. In the other, serum IL-15 levels increased (from 135.9 pg/ml to 283.5 pg/ml).

Table I. *Serum interleukin-15 (IL-15) levels in patients with mycosis fungoides*

No.	Age/sex	Stage	Epidermotropism	PUVA	IL-15 (pg/ml)	sIL-2R (U/ml)
1	64/F	Ia	+	+	59	N.D.
2	65/M	Ia	+	–	15.7	558
3	65/F	Ia	+	+	152.5	323
4	67/M	Ia	+	–	195.7	N.D.
5	50/F	Ib	+	+	69.8	231
6	57/M	Ib	+	+	71.4	N.D.
7	62/F	Ib	+	–	60.8	355
8	70/F	Ib	+	–	79.7	508
9	57/M	IIb	+	+	102	654
10	73/M	IIb	–	–	135.9	7837

sIL-2R: soluble IL-2 receptor. N.D.= not determined.

DISCUSSION

One important feature of MF is that lymphocyte proliferation remains restricted to the skin and, therefore, some cytokines or chemokines may be essential for the disease. Previously, keratinocytes derived from interleukin-7 (IL-7) proved to be necessary to cultivate freshly isolated Sezary cells and some established Sezary cell lines (4). The importance of IL-7 in the pathogenesis of MF, however, remains controversial (5). Serum concentrations of sIL-2R in patients with MF are found to be increased (6) and are a good marker of disease activity. Serum levels of IL-15 in patients with MF have not been discussed so far. Our study suggests that, at least in stages I and II, they cannot be used as a marker of disease activity like sIL-2R levels, which were elevated in our 2 stage IIb patients.

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