Discoid and Subacute Cutaneous Lupus Erythematosus: Detection of Differences in Peripheral Lymphocyte Numbers

Sir,

Reduced leukocyte and lymphocyte counts are a well-known phenomenon in patients with systemic lupus erythematosus (SLE) and are included in the classification of the American College of Rheumatology (1). However, in patients with cutaneous lupus erythematosus absolute counts of peripheral lymphocytes have only been sporadically investigated. Gilliam & Hurd (2) in 1976 analyzed circulating lymphocytes in patients with discoid lupus erythematosus (DLE). They found normal T-cell numbers in these patients. In 1986 Kind et al. (3) reported on T- and B-cell abnormalities in cutaneous lupus erythematosus. They showed that patients with subacute cutaneous lupus erythematosus (SCLE) had significantly diminished mean numbers of CD3+ CD8+ cells compared to healthy controls. A similar difference could not be found between patients with DLE and healthy controls. Both studies were done on fairly small patient groups: 24 and 18 patients with LE, respectively. Therefore, in this study we analyzed circulating lymphocytes in a larger group of patients with LE.

MATERIAL AND METHODS

We analyzed absolute numbers of peripheral lymphocytes in 80 patients with LE (40 females and 40 males; age range 21–86 years; mean age 46 years; DLE: $n = 47$; SCLE: $n = 19$; SLE: $n = 14$) and in 20 healthy controls (10 females and 10 males; mean age 51 years) using flow cytometry. The following subsets were included: B-lymphocytes (CD19+), T-lymphocytes (CD3+), T-helper cells (CD3+ CD4+) and cytotoxic T-cells (CD3+ CD8+). The mean cell numbers of the lymphocyte subsets of the different forms of LE were evaluated and differences between them were checked for significance using Student's *t*-test.

RESULTS AND DISCUSSION

Overall, our data showed normal numbers of peripheral lymphocyte subsets in DLE patients, while cell counts in SCLE and SLE patients were diminished (Fig. 1). We found a significant difference ($p\omega 0.01$) between mean lymphocyte counts of DLE and SCLE patients. Mean counts of all investigated lymphocyte subsets (B-lymphocytes, T-lymphocytes, CD3+ CD4+ and CD3+ CD8+ cells) showed significant differences between the following LE forms: B-, T- and T-helper cells ($p\omega 0.01$); cytotoxic T-cells ($p\omega 0.05$). Differences between DLE patients and healthy controls and between SCLE and SLE patients were not significant.

Previously, Kind et al. (3) were able to show that mean absolute counts of CD3+ CD8+ cells differed significantly between DLE and SCLE patients. Furthermore, we were able to show significant differences between DLE and SCLE patients in all of the investigated subtypes of circulating lymphocytes: DLE and SCLE patients differed in their profile of B-cells, T-cells, CD3+ CD4+ cells and CD3+ CD8+ cells. We agree with Kind et al. that DLE and SCLE are separate entities of cutaneous LE with different immunologies and clinical presentations.

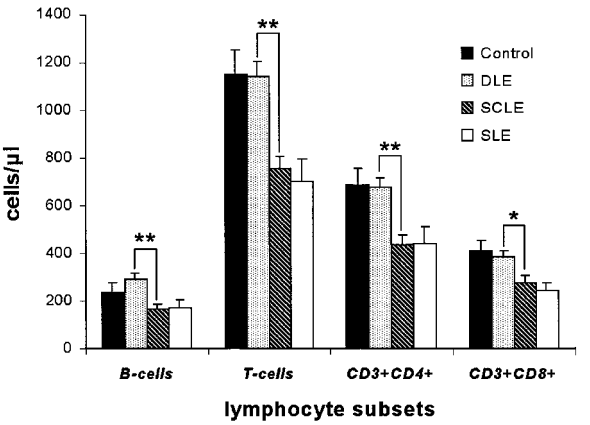

Fig. 1. Mean (±SEM) lymphocyte numbers/µl in LE subsets. *$p\omega 0.05$; **$p\omega 0.01$.

Interestingly, we found no significant differences between DLE patients and healthy controls on the one hand and between SLE and SCLE patients on the other. This may be a hint that different pathogenetic features play a role in these LE subtypes. The immunological disturbances in SCLE point to a closer correlation between this subtype and SLE. However, it remains unclear whether the described diminished mean lymphocyte numbers and numbers of lymphocyte subsets are primary or secondary in the pathogenesis of SCLE and SLE. Further investigations are warranted to answer this question.

REFERENCES

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