What Causes CD4+ T-Lymphocytopenia?

To the Editor:

Turett and Telzak1 raise some interesting points in their recent article entitled “Normalization of CD4+ T-Lymphocyte Depletion in Patients Without HIV Infection Treated for Tuberculosis” appearing in the May issue of Chest; however, several issues need to be addressed. First, they report on three patients with CD4+ T-lymphocytopenia; yet, only two of these patients actually meet the criteria established by the Centers for Disease Control for CD4+ T-lymphocytopenia,2 as patient 1 failed to show a CD4+ T-lymphocyte count less than 300 cells/mm3 on even one occasion, and thus the patient cannot be considered to have CD4+ T-lymphocytopenia.

Another point that needs to be addressed is the authors’ comparison of their findings with previous reports of CD4+ T-lymphocyte depletion in other disease states. They report that CD4+ T-lymphocyte depletion was reported in the absence of HIV infection in patients with both cryptogomalovirus infection3 and cryptococcal infection.4 However, the report of CD4+ T-lymphocyte depletion in cryptogomalovirus disease made no mention if the patients studied were, in fact, HIV infected.4 How can Drs. Turett and Telzak state unequivocally that these patients were not HIV infected, when at the time of the study, in 1980, the HIV antibody test was not yet developed? With regard to the report4 of CD4+ T-lymphocyte depletion in a patient with cryptococcal neoformans infection, this patient had low CD4+ T-lymphocyte counts, with an inverted CD4+/CD8 ratio. This was not present in the patients reported by Drs. Turett and Telzak and probably represented a selective depletion in CD4+ T-lymphocytes, which is probably an entirely different process than the generalized decrease in T-lymphocytes that the present authors observed in their patients.

What appears more likely is that the patients reported in the present article had a generalized reversible, depression in T-lymphocytes, a finding which has already been shown to result from tuberculosis5,6 as well as from other infectious processes, such as lepromatous leprosy7 and histoplasmosis.8 In all these reports, there was a normalization of all lymphocyte populations with therapy.

In addition, their statement that tuberculosis is a reversible cause of unexplained CD4+ T-lymphocytopenia is misleading to the extent that the generally accepted criteria for the diagnosis of this condition excludes processes which are known to cause transient lymphocyte depletion.2 Following their reasoning, if tuberculosis is a possible cause of unexplained CD4+ T-lymphocytopenia, so is histoplasmosis, lepromatous leprosy, and several other infectious processes.

I believe that Drs. Turett and Telzak do raise some interesting points in this article; however, I believe that it is misleading to classify tuberculosis as a possible cause of unexplained CD4+ T-lymphocyte depletion considering what we know concerning this disease process. The authors have simply described a reversible, generalized decrease in T-lymphocytes, which has been shown in the past, to occur with tuberculosis, as well as several other disease processes.

James F. Gettler, MD
Department of Medicine, Interfaith Medical Center, Brooklyn, New York

REFERENCES

2 Centers for Disease Control. CD4+ T-lymphocytopenia in patients without evident HIV infection: United States. MMWR 1992; 41:578-79
6 Singhal M, Banavalikar JN. Peripheral blood T-lymphocyte subpopulations in patients with tuberculosis and the effects of chemotherapy. Tubercle 1989; 70:171-78

To the Editor:

We thank Dr. Gettler for his letter regarding our article “Normalization of CD4+ T-lymphocyte Depletion in Patients Without HIV Infection Treated for Tuberculosis” (Chest 1994; 105:1335-37), and we would like to respond in detail to his comments, some of which are inaccurate.

Table 1—Abnormal Findings in Chest X-Rays

<table>
<thead>
<tr>
<th>Findings</th>
<th>Patients</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signs of poor inspiratory effort</td>
<td>28/32</td>
<td>87.5</td>
</tr>
<tr>
<td>Interstitial edema</td>
<td>14/32</td>
<td>43.75</td>
</tr>
<tr>
<td>Subsegmental atelectasis</td>
<td>12/32</td>
<td>37.5</td>
</tr>
<tr>
<td>Pleural effusion</td>
<td>2/32</td>
<td>6.25</td>
</tr>
<tr>
<td>Cardiomegaly</td>
<td>2/32</td>
<td>6.25</td>
</tr>
<tr>
<td>Total abnormal findings</td>
<td>28/32</td>
<td>87.5</td>
</tr>
</tbody>
</table>