Table 1. Risk factors for developing herpesvirus infection among HIV-infected patients who received prednisone.

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>Relative risk</th>
<th>95% CI</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>All herpesvirus infections</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CD4 cell count of &lt;50/mm³</td>
<td>4.8</td>
<td>2.1-10.6</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Prednisone use</td>
<td>0.46</td>
<td>0.2-1.1</td>
<td>.08</td>
</tr>
<tr>
<td>Prior opportunistic infection*</td>
<td>0.6</td>
<td>0.32-1.12</td>
<td>.10</td>
</tr>
<tr>
<td>CMV infections</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CD4 cell count of &lt;50/mm³</td>
<td>15.4</td>
<td>3.6-15.8</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Prednisone use</td>
<td>0.7</td>
<td>.45-1.2</td>
<td>.2</td>
</tr>
<tr>
<td>Prior opportunistic infection*</td>
<td>0.46</td>
<td>.17-1.2</td>
<td>.13</td>
</tr>
</tbody>
</table>

* Prior opportunistic infections include Pneumocystis carinii pneumonia, toxoplasmiosis, cryptococcosis, histoplasmosis, and disseminated Mycobacterium avium complex infection.

In the present study we found that the rates of herpesvirus infections among patients treated with prednisone were similar to those among controls who had never received any corticosteroid. Similar rates of CMV infection were also found among patients treated with prednisone and among controls (even among those with CD4 cell counts of <50/mm³). Multivariate analysis with use of logistic regression demonstrated that a CD4 cell count of <50/mm³ was the only statistically significant risk factor for the development of any herpesvirus infection, including CMV infection.

There are several possible reasons that our results diverged from those of other studies. Our study included all HIV-infected patients treated with prednisone, and the evaluation was not limited to a specific patient population, such as those treated for infections due to P. carinii or Mycobacterium tuberculosis. In addition, we included inpatients as well as outpatients in our study population, while other studies included only hospitalized patients treated with corticosteroids. Thus, it is possible that those patients who had active opportunistic infections or who were sick enough to require hospitalization might have been more susceptible to the immunosuppressive effects of corticosteroids and more likely to develop an active herpesvirus infection than were those who were less ill.

Corticosteroids can be administered safely as adjuvant therapy for HIV-related infections. Only three studies have reported an increased rate of herpesvirus infections among recipients of corticosteroids, but these trials yielded inconsistent results; one trial showed increased rates of mucocutaneous herpes simplex, another reported increased rates of VZV infection, and the third reported increased rates of CMV infections among patients with <50 CD4 cells/mm³[1-6]. Our study did not find increased risk of any of these infections in patients treated with corticosteroids, regardless of the patient’s CD4 cell count. We believe that administration of corticosteroids adds an insignificant level of risk for developing herpesvirus infections in HIV-infected patients. We conclude that the risk of herpesvirus infection is related to the stage of HIV infection and is not influenced by treatment with corticosteroids.

Philip Keiser, Jonathan Jockus,* Heidi Horton, and James W. Smith

University of Texas Southwestern Medical Center, and Department of Veterans Affairs Medical Center, Dallas, Texas

References

Sternal Osteomyelitis Due to Mycobacterium tuberculosis Following Coronary Artery Bypass Surgery

A 56-year-old male underwent semiurgent coronary artery bypass graft (CABG) surgery. A preoperative chest radiograph did not show any abnormalities. No intrathoracic abnormalities were noted during surgery. The immediate postoperative course was uneventful. Seven months later erythema, tenderness, and blisters, which were associated with local pain during movement and coughing, developed over the sternotomy incision. Routine culture of the wound was negative. There was no improvement in the patient’s condition following debridement in the surgeon’s office and treatment with oral antibiotics. One month later, exploration of the wound revealed necrosis of the lower portion of the sternum. Repeated routine cultures were negative. The wound was packed open, and a course of ciprofloxacin hydrochloride was given, without improvement in his condition. Throughout this period he complained of fever, sweats, and general fatigue.

One month later, the patient underwent single-stage sternectomy with closure of the pectoralis muscle flap. The sternum was described as white and friable and was cottage cheese—like in appearance. Culture of bone fragments yielded Mycobacterium tuberculosis.

Reprints or correspondence: Dr. Eytan M. Rubinstein, Section of Infectious Diseases and Epidemiology, Saint Francis Hospital & Medical Center, 114 Woodland Street, Hartford, Connecticut 06105.

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Empyema Necessitans Due to Streptococcus milleri

Streptococcus milleri has a tendency to cause the formation of abscesses in the abdomen, brain, and joint spaces but is an uncommon cause of empyema [1,2]. We describe a patient who presented with massive hemoptysis and was found to have empyema necessitans due to S. milleri.

A 56-year-old male with emphysema was admitted to the hospital for evaluation of massive hemoptysis. He denied fevers, purulent sputum, or cough. One month before this presentation, he was treated for necrotizing pneumonia with an unknown antibiotic. At that time bronchoscopy revealed purulent material draining from the anterior, apical, and posterior segments of the right upper lobe. During the current presentation, an attempt at bronchoscopy precipitated hypoxemia, which necessitated intubation and mechanical ventilation. He was transferred to our facility for further care.

The patient had a long history of smoking and alcohol abuse. Physical examination revealed that a nasotracheal tube had been placed and that he had poor dentition and diminished breath sounds at the right apex. There was a nonerythematous, fluctuant area (10 cm x 13 cm) over the right posterior hemithorax. The WBC count was 16,700/mm³ with 96% neutrophils. A chest radiograph revealed a cavitary lesion (10 cm) in the right upper lobe, destruction of the 7th right rib, and a low-density fluid collection in the extrapleural tissue of the right hemithorax. The WBC count was 16,700/mm³ with 96% neutrophils. A chest radiograph revealed a cavitary lesion (10 cm x 10 cm) in the right upper lobe and bullous emphysema. CT showed a cavitary lesion in the right upper lobe, destruction of the 7th right rib, and a low-density fluid collection in the extrapleural tissue of the right hemithorax contiguous with the pleural space, consistent with empyema necessitans (figure 1). Percutaneous aspiration of the fluctuant area yielded purulent material. A gram stain showed gram-positive cocci in small chains. Cultures yielded a penicillin-susceptible Streptococcus species identified as S. milleri with the API 20 STREP biochemical identification system (bioMérieux, Vitex, Hazelwood, MO).

The patient underwent open drainage and resection of the 7th right rib and received 24 million units of intravenous penicillin daily; a radiograph showed resolution of the right upper lobe cavity and extrapleural fluid collection. The hemoptysis resolved, and he was successfully weaned from ventilatory support after 21 days. He was discharged with a prescription for oral penicillin (500 mg four times daily) and was doing well 8 weeks after initiation of antimicrobial therapy.

References

Correspondence: Dr. Mark A. Marinella, 33 West Rohn Road, Dayton, Ohio 45429.