Abstract

Context: Discoid lupus erythematosus (DLE) and human immunodeficiency virus (HIV) are both disorders of the immune system. The pathophysiology of these diseases varies greatly as DLE is characterized by an overactive immune system that attacks normal host cells, whereas HIV is characterized by an exogenous attack on the immune system that depletes it of key cell types. Although the reason is unknown, co-occurrence of DLE and HIV is rare.

Aims: The goal of this study is to determine the prevalence of co-occurrence of DLE and HIV and to determine whether patients with both DLE and HIV share any clinical feature.

Subjects and Methods: The medical records of all patients seen within a single academic health center over a 20-year period were reviewed to determine the prevalence of cutaneous lupus, HIV, and co-occurrence of these conditions. The charts of patients diagnosed with both conditions were further reviewed to determine similarities between them.

Results: Of the 10,719 patients diagnosed with HIV and 182 patients diagnosed with cutaneous lupus, only 2 patients were diagnosed with both conditions. Both of these patients were diagnosed with DLE several years after being diagnosed with HIV. They had an undetectable HIV viral load, normal CD4 T-cell counts, and were on antiretroviral therapy when diagnosed with DLE.

Conclusion: These results confirm that co-occurrence of DLE and HIV is rare. Although our study population was small, findings from these patients suggest that in HIV-positive patients, DLE manifestations occur when their HIV disease activity is minimal.

Key Words: Autoimmunity, cell-mediated immunity, discoid lupus erythematosus, epidemiology, human immunodeficiency virus, systemic lupus erythematosus

Introduction

With only four cases reported in literature to date, codiagnosis with both discoid lupus erythematosus (DLE) and human immunodeficiency virus (HIV) is rare.\(^1\)\(^-\)\(^4\) The exact prevalence of codiagnosis with both of these conditions has not yet been studied. In this report, we present the findings of a retrospective chart review designed to determine the prevalence of co-occurrence of DLE and HIV. In addition, charts of patients diagnosed with both conditions were reviewed individually to gather information related to their demographics and medical history.

Subjects and Methods

All aspects of the study complied with the Declaration of Helsinki and were approved by the Institutional Review Board (reference number 130,844) at our academic center. The electronic medical records of all patients seen within our center's health system between 1993 and 2013 were queried for a diagnosis of both HIV and cutaneous lupus using the International Classification of Diseases-9 codes associated with these diagnoses (042 and either 695.4 or 373.34, respectively).
After identifying patients of interest, the records of these patients were reviewed for patient-specific data, including demographic data, dates of disease diagnoses, medications at the time of HIV and cutaneous lupus diagnoses, and pertinent laboratory results.

Results
Records from approximately 2,205,000 patients were searched. Of these, 10,719 patients were diagnosed with HIV, yielding a prevalence of 486 HIV cases per 100,000 patients. A total of 182 patients were diagnosed with cutaneous lupus, yielding a prevalence of 8 per 100,000 study patients, and 2 patients were diagnosed with both HIV and cutaneous lupus. On further review of these patients’ charts, both of these patients carried a diagnosis of DLE, making the overall prevalence of codiagnosis with DLE and HIV in the study population 0.09 per 100,000 patients or a DLE diagnosis rate of 0.02% in the HIV+ population. A thorough chart review of the two patients diagnosed with both DLE and HIV was conducted. Data from this chart review are presented in Table 1.

Discussion
Our finding of a DLE prevalence of 0.02% in the HIV+ population confirms that co-occurrence of DLE and HIV in the study population is extremely low. While the prevalence of HIV in the study population is very similar to the estimated prevalence of HIV in the United States (US) (453/100,000), the prevalence of DLE in the study population is slightly lower than the estimated DLE prevalence in the US (17–48/100,000). Therefore, while our results may slightly underestimate the overall prevalence of the co-occurrence of DLE and HIV in the US, these findings still suggest that co-occurrence of these conditions is rare.

Table 1: Characteristics of the two patients diagnosed with both discoid lupus erythematosus and human immunodeficiency virus

|                         | Patient 1 | Patient 2 |
|-------------------------|-----------|-----------|
| Age of HIV onset        | 32        | 40        |
| Age of DLE onset        | 39        | 51        |
| CD4 count at time of DLE onset | 572   | 431       |
| HIV viral load at time of DLE onset | Undetectable | Undetectable |
| HAART at time of DLE onset? | Yes    | Yes       |
| Diagnosed with SLE?     | Yes       | Yes       |
| ANA                     | Negative  | Positive  |
| Anti-dsDNA              | Negative  | Negative  |
| Anticardiolipin         | Positive  | Positive  |
| Antiphospholipid syndrome? | No     | Yes       |

DLE: Discoid lupus erythematosus, HIV: Human immunodeficiency virus, HAART: Highly active antiretroviral therapy, SLE: Systemic lupus erythematosus, ANA: Antinuclear antibody

The reason for this low prevalence is unclear. Some authors have attributed this finding to demographic differences in the patients affected by these conditions as HIV is most common in homosexual men and intravenous drug users and lupus is more common in adult women. Our findings support this theory as both patients in this study were adult African-American females.

Another hypothesis is that HIV may be somewhat protective against lupus due to HIV-associated depletion of CD4+ T-cells, which are often viewed as requirement for developing lupus. This theory is supported by numerous case reports of HIV patients diagnosed with systemic lupus erythematosus (SLE) as part of an immune reconstitution syndrome that occurs after initiating highly active antiretroviral therapy (HAART). Both patients in our review had undetectable HIV viral loads and normal CD4+ T-cell counts on HAART when they developed DLE lesions, suggesting that they had sufficient recovery of their immunity to mount a self-directed response despite infection with HIV.

SLE provides another potential similarity between these patients. While the first patient had a self-reported history of SLE that had been quiescent for over a decade before her diagnosis with HIV, the second developed SLE-associated symptoms just before her DLE diagnosis, again suggesting an association with immune reconstitution. Both patients also had positive anticardiolipin, with the second patient diagnosed with APS, possibly suggesting an increased prevalence of hypercoagulability in this patient population.

With a sample size of only two patients, generalizations regarding the population of patients diagnosed with both DLE and HIV are difficult to make based on this study. With further research on the role of innate and cell-mediated immunity in these conditions, a better understanding of the diagnosis and treatment of these patients may be possible. Until then, the diagnosis of DLE in an HIV+ patient should not be overlooked and conducting a thorough review of systems in any HIV+ patient newly diagnosed with DLE may be beneficial to screen for systemic autoimmunity.

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Nil.

Conflicts of interest
There are no conflicts of interest.

What is new?
• The prevalence of DLE in the HIV+ population at our academic medical center is 0.02%.
• Development of DLE in the HIV+ population may be part of an immune reconstitution syndrome.
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