Substance-use Disorders, Opportunistic Infections, and Human Immunodeficiency Virus Patients

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BACKGROUND

The excessive use of a drug that is harmful to the person as well as society at large is referred to as substance addiction or abuse. Some substances and risky and unsafe sexual behaviors have been linked to an increased risk of human immunodeficiency virus (HIV) infection. These frequently used substances include tobacco, alcohol, marijuana, crack cocaine, and opiates. More than 50% of HIV patients were found to use alcohol, compared to 5–15% for cocaine.1 Marijuana, too, is prevalent in HIV patients. People with HIV smoke twice as much tobacco as the general population.1

It has long been understood that using addictive substances also results in higher infection rates. For instance, tuberculosis (TB) is a common source of opportunistic infections in this setting because HIV patients are more likely to contract the disease due to the abuse of drugs. There is currently a serious threat from drug-resistant TB. India, China, and Russia together account for 62% of the world’s drug-resistant TB burden.2

MATERIALS AND METHODS

Between April 2021 and March 2022, a prospective study on the prevalence of substance abuse in antiretroviral therapy (ART)—naive HIV patients older than 12-year-old was carried out at the ART Center, Khagaria. A questionnaire covering substance type, use frequency, and length of addiction was created. For the purpose of identifying opportunistic infections, clinical examinations, and tests, such as complete blood count/cheat X-ray (CBC/CXR) cartridge-based nucleic acid amplification test (CBNAAT) of sputum for Mycobacterium tuberculosis with other pertinent testing, were performed.

RESULTS AND DISCUSSION

Eligible patients (n = 201) with age (mean −33.34, standard deviation, 11.33) and gender identity, 116,84,1 (male, female, and transgender) were studied. Alcohol, marijuana, crack cocaine, and tobacco were among the substances used by 20% of HIV patients. In HIV patients with

<table>
<thead>
<tr>
<th>Total no. of patients (n = 201)</th>
<th>No opportunistic infection</th>
<th>Opportunistic infections</th>
<th>Percentage opportunistic infection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gr. 1, Cases with no addiction n1−162</td>
<td>138</td>
<td>24</td>
<td>15</td>
</tr>
<tr>
<td>Gr. 2, Cases with addiction n2−39</td>
<td>21</td>
<td>18</td>
<td>46</td>
</tr>
</tbody>
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Fig. 1: Incidence of opportunistic infections
substance use disorders, the percentage incidence of opportunistic infections is 46%, which is significantly higher than the 15% rate in HIV patients without a history of substance use. Incidence of opportunistic infections was compared between the two groups (Fig. 1). Chi-squared test −18.67 and degree of freedom -1 indicated that the p-value was highly significant (p=0.00001). Of 39 opportunistic coinfection in HIV patients, 26 cases have drug-sensitive TB, two cases have drug-resistant TB, seven had extrapulmonary TB, and four cases had other than tuberculosis.

Human immunodeficiency virus (HIV)—infected drug users who also have latent TB develop the disease as a result of increased immunosuppression, increased transmission from crowded areas, and latent TB infection. These substances immunomodulate the immune system by influencing T-helper 1 and 2 response.3

REFERENCES

1. https://www.cdc.gov/hiv/basics/substanceabuse