Perspective

Primary Care Concerns for the Aging Population With HIV

Because individuals with HIV are living longer, comorbidities are moving to the forefront of HIV patient care. People with HIV have a higher risk for HIV-related and non–HIV-related cancers than the general population, making cancer screening vital for this population. Immunizations are another important element of primary care for older adults with HIV, including a COVID-19 vaccine, about which data continue to evolve. This article summarizes a presentation by Steven C. Johnson, MD, at the International Antiviral Society–USA (IAS–USA) virtual HIV course Aging and HIV: Issues, Screening, and Management in Individuals with HIV as They Age in June 2021.

Keywords: HIV, aging, primary care, cancer screening, vaccine, immunization, COVID-19, mortality

Antiretroviral therapy (ART) has improved outcomes for individuals with HIV, and HIV-related deaths have continued to decline (Figure 1).1 In the D:A:D (Data Collection on Adverse Events of Antiretroviral Drugs) study, a reduction in AIDS-related deaths was observed along with improved CD4+ cell counts from 1999 to 2011, although deaths due to non–AIDS-related cancers increased during this period.2 In a study from the Kaiser Permanente group, life expectancy from 2000 to 2016 among individuals with HIV approached that of individuals without HIV; however, those with HIV continued to experience more comorbidities than those who did not have HIV.3 As people with HIV age, primary care becomes an increasingly important element of their care.

Understanding the causes of morbidity and mortality in older people with HIV is central to HIV primary care. People with HIV have a higher risk for HIV-related and non–HIV-related cancers than the general population.6 In a study that compared individuals with HIV from 2 separate cohorts with individuals from the Surveillance, Epidemiology, and End Results (SEER) Program from the National Cancer Institute, individuals with HIV had statistically higher levels of various cancers (Table 2).7 Strategies that HIV care clinicians can implement for cancer screening in their patients are shown in Table 3.

Cancer Screening

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Colorectal Cancer

The US Preventive Services Task Force (USPSTF) and the Infectious Diseases Society of America (IDSA) each provide detailed guidance on screening for people with HIV.4,5 Including for various cancers, osteoporosis, and prevention of falls.

Lung Cancer

Lung cancer is more common in people with HIV when compared with the general population (Table 2), so adherence to screening guidelines is important. The USPSTF recommends lung cancer screening annually in all adults aged 50 to 80 years with a 20 pack-year history of smoking who are current or former (within 15 years) smokers.9 Screening is performed via a low-dose CT scan of the chest. The USPSTF recommends that screening be discontinued after 15 years without smoking, or if the individual develops a health problem that substantially limits life expectancy or the ability and willingness to have curative lung surgery.

Breast and Cervical Cancers

The IDSA recommends breast cancer screening at least every 2 years for individuals with HIV aged 50 to 75 years. They also recommend cervical cancer screening beginning at age 30 years, with a Papanicolaou (Pap) smear at ages 30 to 50 years (grade A recommendation) and every 2 years for those aged 51 to 75 years (grade B recommendation) and for selected individuals aged 76 to 85 years based on overall health, prior screening, and preferences (grade C recommendation).8 Suggested screening methods include stool-based tests (eg, fetal occult blood or fecal immunochemical test) or direct visualization (eg, computed tomography [CT] colonography, flexible sigmoidoscopy, or colonoscopy).

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Figure 1. Age-adjusted rates of total, HIV-related, and non–HIV-related deaths among individuals aged 13 years and older with HIV from 2010 to 2018. Adapted from Bosh et al.1
test at the time of HIV diagnosis and repeated annually, and then every 3 years if results are normal for 3 years consecutively.

**Anal Cancer**

People with HIV also have a markedly increased risk of anal cancer. This has led to many programs performing anal cytologic screening and high resolution anoscopy to treat anal dysplasia in an attempt to reduce the incidence of anal cancer. This approach has been recently validated with the results from the ANCHOR (Anal Cancer/HSIL Outcomes Research) study, which is funded by the National Institutes of Health (NIH) and is awaiting publication. This study will likely lead to stronger recommendations regarding anal cytologic screening.

**Immunizations**

Immunizations are an important part of primary care for older adults with HIV. The Centers for Disease Control and Prevention (CDC) and the US Department of Health and Human Services provide guidance on appropriate dosing and frequency of available vaccines for individuals with HIV. An immunization schedule by vaccine type and age group is provided in Table 4.

**COVID-19 Vaccine**

Large cohort studies have reported a higher risk of mortality in people with HIV who develop COVID-19. People with HIV often have other comorbidities associated with risk for severe COVID-19, including older age, obesity, cardiovascular disease, lung disease, hypertension, diabetes, and cancer. The CDC has recognized HIV infection as one of the medical conditions that increase risk for severe illness with COVID-19, and in 2021 the organization added a recommendation that everyone who is aged 12 years and older should receive the COVID-19 vaccine. Recent CDC data in the general population indicated the Moderna vaccine to be better than the Pfizer vaccine, which is considered better than Johnson & Johnson, although we do not have comparative data in people with HIV. Of note, people taking ART with well-controlled HIV were included in the phase III trials of the Moderna, Pfizer, and Johnson & Johnson vaccines, but complete data from these trials on immunogenicity, efficacy, and safety in people with HIV are not yet available. Although none of the COVID-19 vaccines currently available are live vaccines, people with HIV who

### Table 1. Common Comorbidities in Older Individuals With HIV

- Alcohol use
- Bipolar disorder
- Depression
- Diabetes
- Drug use
- Heart disease
- Hepatitis B
- Hepatitis C
- Human papillomavirus infection, syphilis, and other sexually transmitted infections
- Hyperlipidemia
- Hypertension
- Non–AIDS-related cancers
- Osteoporosis
- Tobacco use
- Tuberculosis

### Table 2. Relative Risk of Cancer in Individuals With HIV Compared With the General Population

<table>
<thead>
<tr>
<th>Type of cancer</th>
<th>Standardized rate ratio (95% confidence interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anal cancer</td>
<td>42.9 (34.1 – 53.3)</td>
</tr>
<tr>
<td>Vaginal cancer</td>
<td>21 (11.2 – 35.9)</td>
</tr>
<tr>
<td>Hodgkin lymphoma</td>
<td>14.7 (11.6 – 18.2)</td>
</tr>
<tr>
<td>Liver cancer</td>
<td>7.7 (5.7 – 10.1)</td>
</tr>
<tr>
<td>Lung cancer</td>
<td>3.3 (2.8 – 3.9)</td>
</tr>
<tr>
<td>Melanoma</td>
<td>2.6 (1.9 – 3.6)</td>
</tr>
<tr>
<td>Oropharyngeal cancer</td>
<td>2.6 (1.9 – 3.4)</td>
</tr>
<tr>
<td>Leukemia</td>
<td>2.5 (1.6 – 3.8)</td>
</tr>
<tr>
<td>Colorectal cancer</td>
<td>2.3 (1.8 – 2.9)</td>
</tr>
<tr>
<td>Renal cancer</td>
<td>1.8 (0.4 – 0.8)</td>
</tr>
</tbody>
</table>

Adapted from Patel et al.

### Table 3. Strategies for Cancer Screening and Prevention in an HIV Program

<table>
<thead>
<tr>
<th>Type of cancer</th>
<th>Prevention strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lung</td>
<td>Tobacco counseling, low-dose chest computed tomography scanning</td>
</tr>
<tr>
<td>Oral</td>
<td>Oral exam</td>
</tr>
<tr>
<td>Anal</td>
<td>Rectal exam, anal cytology</td>
</tr>
<tr>
<td>Prostate</td>
<td>Rectal exam, prostate-specific antigen testing discussion</td>
</tr>
<tr>
<td>Cervical</td>
<td>Pelvic exam, cervical cytology, human papillomavirus testing</td>
</tr>
<tr>
<td>Colorectal</td>
<td>Rectal exam, fecal occult blood testing, colonoscopy</td>
</tr>
<tr>
<td>Melanoma</td>
<td>Periodic skin exam, sun exposure counseling</td>
</tr>
<tr>
<td>Liver</td>
<td>Hepatitis B vaccine, hepatitis B and C treatment if applicable, abdominal ultrasound, computed tomography scan for surveillance</td>
</tr>
</tbody>
</table>

Adapted from Patel et al.
are taking ART and have CD4+ cell counts in normal ranges respond well to live vaccines, so there is potential for this to hold true with COVID-19 vaccines in the future.11 People with HIV who have advanced disease and are immunocompromised may have a reduced response to vaccines but are also at greater risk for severe COVID-19. For patients with advanced HIV infection (eg, CD4<200 cells/µL) or untreated HIV infection, a third dose of the mRNA vaccine is recommended at least 28 days after the receipt of the first 2 doses of either of the mRNA vaccines. People with HIV are now eligible for boosters of the COVID-19 vaccine 6 months after the primary series of the mRNA vaccines or 2 months after the primary immunization with the Johnson & Johnson vaccine. The booster can either be the same vaccine previously received (a homologous booster) or a different COVID-19 vaccine (a heterologous booster).

**Summary**

Life expectancy continues to improve for people with HIV, but comorbidities continue to play a large role in morbidity and mortality, making primary care crucial for this population. Many of the USPSTF recommendations are particularly important for older people with HIV, including updated guidelines for lung and colorectal cancer screening. Immunizations are also important in older people with HIV, with the role of COVID-19 vaccination continuing to evolve as more data become available.

**References**
