Source: UNAIDS epidemiological estimates, 2023 [https://aidsinfo.unaids.org/1]
Number of HIV-related deaths, global, 1990-2022

Estimated adult and child deaths from AIDS | 2022

Total: 630 000 [480 000–880 000]
Global burden of cancer: today

“We should put out the fire while it is still small.” – Kenyan proverb

World Health Organization. Global Health Estimates
Global burden of cancer: today

Estimated number of global cancer deaths in 2022

9,736,779

10 million cancer deaths in 2022

“We should put out the fire while it is still small.” — Kenyan proverb
Global burden of cancer: today

Estimated number of global cancer deaths in 2022

10 million cancer deaths in 2022

70% in low- and middle-income countries

“We should put out the fire while it is still small.” – Kenyan proverb
Beyond Barriers: Enhancing the Reach of HIV Service Delivery by **Addressing Cancer in PWH**

OR

*"We should put out the fire while it is still small."* – Kenyan proverb

**Thomas A. Odeny, MD, MPH, PhD**

Assistant Professor of Medicine  
Division of Oncology, Washington University in St. Louis  
Senior Principal Clinical Research Scientist  
Kenya Medical Research Institute
DISCLOSURES

1. Research funding from Gilead Sciences

“We should put out the fire while it is still small.” – Kenyan proverb
1. Global Burden of Cancer vs. HIV

2. Cancer in People with HIV

3. Opportunities to Enhance the Reach of HIV Service Delivery by Addressing Cancer in PWH

4. Conclusions/Invitation

“We should put out the fire while it is still small.” – Kenyan proverb
Global burden of cancer 2022-2050

Estimated increase in new cancer cases 2022-2050

Soerjomataram et al. Nat Rev Clin Oncol 2021

"We should put out the fire while it is still small." – Kenyan proverb

35 million new cancer cases by 2050

142% increase in new cancer cases in low-income countries
Global burden of cancer: 2020-2040

Estimated increase in new cancer cases 2020-2040, Africa

2020: 1.11M
2040: 2.08M

“We should put out the fire while it is still small.” – Kenyan proverb
Comparing Global Burden of HIV and Cancer

HIV-related deaths

Cancer-related deaths

Figure 12.2 Number of AIDS-related deaths, global, 1990–2022, and 2025 target

Source: UNAIDS epidemiological estimates, 2023 (https://aidsinfo.unaids.org)
OUTLINE

1. Global Burden of Cancer vs. HIV

2. Cancer in People with HIV

3. Opportunities to Enhance the Reach of HIV Service Delivery by Addressing Cancer in PWH

4. Conclusions/Invitation

“We should put out the fire while it is still small.” – Kenyan proverb
The complex and intersecting social, structural, behavioral, and lifestyle factors that affect cancer risk for PWH
Cancer in People Living with HIV (PLWH)

Age-standardized mortality rates in PLWH and HIV-uninfected patients with cancer

PWH have **higher cancer-specific mortality** than HIV-uninfected patients

Coghill AE et al. J Clin Oncol. 2015
Causes of death in PWH from the Swiss Cohort Study 2005-2022

31.1%

Non-AIDS defining cancers doubled as a cause of death

Weber et al. Clin Infect Dis, 2024

AIDS-defining cancers doubled

31.1%

37%

80%
Incidence rates of Kaposi sarcoma in 2020

GLOBOCAN 2022
Cancer in People with HIV (PWH)

Probability of receiving cancer (Ca) treatment within 6 months of diagnosis, by age and HIV status.

PLWH experience **more barriers** to cancer care
- More likely to be diagnosed with cancer at advanced stage
- Less likely to receive cancer treatment
- Less likely to be enrolled in cancer clinical trials

*Rositch AF et al. Clin Infect Dis. 2018*
1. Global Burden of Cancer vs. HIV

2. Cancer in People with HIV

3. Opportunities to Enhance the Reach of HIV Service Delivery by Addressing Cancer in PWH

4. Conclusion/Invitation
# Exemplars of HIV implementation interventions and strategies and potential adaptations for cancer in PWH

<table>
<thead>
<tr>
<th>Intervention in HIV</th>
<th>Potential Adaptation for Cancer in PWH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Tablet Regimens (STRs)</td>
<td>Simplify cancer treatment dosing to improve adherence.</td>
</tr>
<tr>
<td>Patient Navigation Services</td>
<td>Provide navigation services to help cancer patients manage healthcare and treatment.</td>
</tr>
<tr>
<td>Telemedicine and Digital Health</td>
<td>Expand access to cancer care through telemedicine and digital platforms.</td>
</tr>
<tr>
<td>Prevention and Screening Programs</td>
<td>Develop widespread screening and prevention programs for high-risk populations.</td>
</tr>
<tr>
<td>Integrated Care Models</td>
<td>Implement multidisciplinary care models for complex cancer treatments.</td>
</tr>
<tr>
<td>Community-Based Interventions</td>
<td>Adapt outreach and education programs for cancer prevention and early detection.</td>
</tr>
</tbody>
</table>
Simplifying cancer treatment dosing to improve adherence in PWH

Treatment of advanced AIDS-associated Kaposi sarcoma in resource-limited settings: a three-arm, open-label, randomised, non-inferiority trial

Susan E Krown, Carter B Moser, Patrick MacPhail, Roy M Matting, Catherine Goffrey, Stephanie R Canzon, Mina Chosainpour, Wladzmir Sarmanek, Mulinda Nyanza, NoflahiW Bokshilala, Fred M Okulo, Josaphat Kosi, Irene Hugford, Nokhonde Molekele, Vincent D Oliver, Henriette Burger, Rosal Marguiss, Modjaba Shi, Thomas B Campbell, Margaret Z Book, for the KOS6LAMC068 protocol team

Summary

Background Optimal treatment regimens for AIDS-associated Kaposi sarcoma, a frequent contributor to morbidity and mortality among people with HIV, have not been systematically evaluated in low-income and middle-income countries, where the disease is most common. In this study, we aimed to investigate optimal treatment strategies for advanced stage disease in areas of high prevalence and limited resources.

Methods In this open-label, non-inferiority trial, we enrolled people with HIV and advanced stage AIDS-associated Kaposi sarcoma attending 11 AIDS Clinical Trials Group sites in Brazil, Kenya, Malawi, South Africa, Uganda, and Zimbabwe. Eligible participants were randomly assigned (1:1:1) with a centralised computer system to receive either intravenous bleomycin and vincristine or oral etoposide (the investigational arm), or intravenous paclitaxel (the control arm), together with antiretroviral therapy (ART; combined efavirenz, tenofovir disoproxil fumarate, and emtricitabine). The primary outcome was progression-free survival (PFS) at week 48, using a 15% non-inferiority margin to compare the investigational groups against the active control group. Safety was assessed in all eligible treated study participants. The study was registered with ClinicalTrials.gov, NCT01435018.

Findings 334 participants were enrolled between Oct 1, 2013, and March 8, 2018, when the study was closed early due to inferiority of the bleomycin and vincristine plus ART arm, as per the recommendations of the Data and Safety Monitoring Board (DSMB). The etoposide plus ART arm also closed due to inferiority in March, 2016, following a DSMB recommendation. Week-48 PFS rates were higher in the paclitaxel plus ART arm than in both investigational arms. The absolute differences in PFS were –30% (95% CI –52 to –8) for the comparison of paclitaxel plus ART (week 48 PFS 50%, 32 to 67; n=59) and etoposide plus ART (20%, 6 to 33; n=59), and –20% (–33% to –7%) for the comparison of paclitaxel plus ART (64%, 55 to 73; n=138) and bleomycin and vincristine plus ART (44%, 35 to 53; n=132). Both CIs overlapped the non-inferiority margin. The most common adverse events, in 329 eligible participants who began treatment, were neutropenia (48 [15%]), low serum albumin (33 [10%]), weight loss (29 [9%]), and anaemia (28 [9%]), occurring at similar frequency across treatment arms.

Interpretation Non-inferiority of either investigational intervention was not shown, with paclitaxel plus ART showing superiority to both oral etoposide plus ART and bleomycin and vincristine plus ART, supporting its use in treating AIDS-associated Kaposi sarcoma in resource-limited settings.

Single agent paclitaxel superior to combined bleomycin + vincristine for HIV-associated Kaposi sarcoma in LMIC

Could adapt HIV strategies that implemented and scaled single drug regimens

Simplifying cancer treatment dosing to improve adherence in PWH

Subcutaneous rituximab is safe and efficacious and precludes need for IV infusions for Lymphoma treatment in Uganda

Could adapt HIV strategies that are implementing injectable PrEP and ART
The American Cancer Society BEACON Initiative supports health systems in LMICs to design, implement, and sustain cancer patient navigation programs.

Could adapt HIV strategies for engagement in care that have implemented and scaled patient navigation.
Telemedicine and Digital Health

Digital Health Pilots in Cancer Programs

Most digital health programs for cancer are isolated pilots

Reach should be extended to PWH with cancer by adapting from successful HIV digital health programs and leveraging impl sci to address barriers to spread.

1. Global Burden of Cancer vs. HIV

2. Cancer in People with HIV

3. Opportunities to Enhance the Reach of HIV Service Delivery by Addressing Cancer in PWH

4. Conclusion/Invitation

“We should put out the fire while it is still small.” – Kenyan proverb
1. Cancer-related deaths are on the rise

HIV-related deaths

Cancer-related deaths

Figure 12.2 Number of AIDS-related deaths, global, 1990–2022, and 2025 target
2. PWH Get More Cancer and Experience More Barriers

Probability of receiving cancer (Ca) treatment within 6 months of diagnosis, by age and HIV status.

PWH are more likely to get cancer

PWH with cancer experience more barriers to cancer care

Rositch AF et al. Clin Infect Dis. 2018
Cancer is a leading cause of death in PWH.
4. Opportunities Exist for Successful HIV implementation strategies to be adapted to extend the reach of services for PWH with cancer

- Simplifying cancer treatment for PWH
- Patient navigation services for PWH with cancer
- Digital Health and Telemedicine
Thank you!

**Washington University**
- Elvin Geng
- Betsy Abente

**Kenya Medical Research Institute (KEMRI)**
- Elizabeth Bukusi
- Eliud Akama
- Fridah Adhiambo