**ABSTRACT**

Background: The concept of universal antiretroviral use as a strategy for reducing new cases of HIV infection has been evaluated in mathematical models as a potential approach to curtailing the Sub-Saharan African epidemic. In order to further substantiate such models, additional strategic options based on robust patient data should be considered, including survival of HIV-infected populations under HAART and subject infectivity as determined by HIV RNA levels.

Methods: A retrospective cohort study was conducted in a population of patients enrolled in DREAM centers throughout sub-Saharan Africa in order to determine survival under HAART. Cox regression analysis was performed evaluating parameters associated with survival such as CD4 cell count, viral load, body mass index (BMI), and hemoglobin (HB) levels. DREAM criteria for HAART initiation included (1) WHO stage ≥3, (2) ≤350 CD4 cells/mm³ if asymptomatic, (3) ≤500 CD4 cells/mm³ if symptomatic, (4) regardless of CD4 cell value (<350 CD4 cells/mm³ if asymptomatic, ≤350 CD4 cells/mm³ if symptomatic), (5) less than 180 days of ongoing treatment with HAART and subject infectivity as determined by HIV RNA levels.

RESULTS: A total of 34,295 patients were included in the analysis. Median patient age was 34 years, 59% were males, and 37% were females. The incidence of patient initiation of HAART was 22.4% per 1000 person-years.

Conclusions: Contrary to more conservative estimates used in mathematical modeling studies, patients in our cohort demonstrated a significant survival benefit even among patients with CD4 cell counts below 200. Patients on HAART had low infectivity potential as measured by plasma viral load. Cohort data from African patients can contribute to the further refinement of predictive models.

**INTRODUCTION**

• Approximately 2 to 3 million individuals become HIV-infected each year worldwide.
• It is estimated that only about 1/3 of HIV-infected individuals in need of highly active antiretroviral therapy (HAART) actually receive it in resource-limited settings.

LABORATORY EVALUATIONS: Included liver function tests and hemoglobin levels of patients. Baseline characteristics of patients with undetectable viral load were evaluated with significant survival increase. Nearly 2/3 of patients with baseline undetectable viral load were still under treatment and alive after 3 years. Every third to the sixth month of treatment monthly. After 6 months of treatment: visits every 3 months unless there was a clinical problem. Patients came monthly to the centers for retrieval of medications, and in case there was a clinical problem, they were referred by the nursing staff.

**STUDY OBJECTIVES**

1. Survival of HIV-infected patients under HAART stratified by baseline CD4 and viral load levels.

2. Determination of subject infectivity as determined by plasma HIV RNA levels over time.

**METHODS**

STUDY DESIGN: Retrospective cohort analysis of patients enrolled in all DREAM centers from 7 years of HAART. Ranged from 50% to 95% patients fulfilled this criteria with a median observation time was 476 days (IQR: 206 – 950). Median patient age: 34 years between 34-<42 years and 24% (n=8122) >42 years. SD=2.4. Median observation time was 476 days (IQR: 206 – 950).

STUDY OBJECTIVE:

1. Survival of HIV-infected patients under HAART stratified by baseline CD4 and viral load levels.

2. Determination of subject infectivity as determined by plasma HIV RNA levels over time.

**BASELINE CHARACTERISTICS OF PATIENT POPULATION**

n=32965

Days in care

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<td>Days of Care</td>
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**REFERENCES**

1. Granich RM, Gilks CF, Dye C, De Cock KM, Williams BG. Universal voluntary HIV testing: a tool in the elimination of the HIV epidemic and demonstrates that its widespread use can significantly reduce HIV-associated mortality and likely contribute to significant decreases in new HIV infections.

2. Our clinical data supports mathematical modeling studies of HAART as a strategy for reducing HIV-1 transmission in Sub-Saharan Africa: Survival and Viral Load Parameters from the DREAM Resource Enforcement Against AIDS and Malnutrition (DREAM) Program.

3. Cox Survival Regression Analysis of patients who initiated HAART.