HIV Incidence among Women at Higher Risk in Beira, Mozambique

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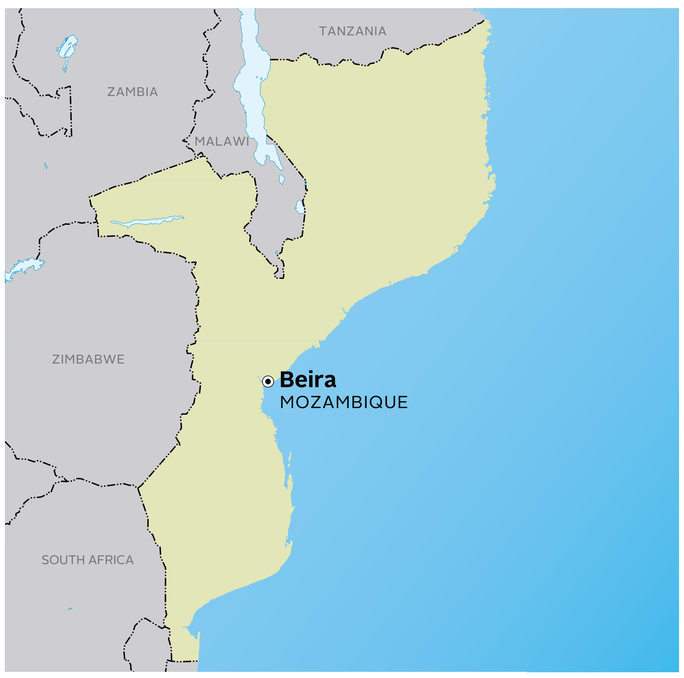
BACKGROUND

HIV prevention trials require recruitment and retention of populations at higher risk for HIV infection. Epidemiologic studies allow researchers to measure HIV incidence rates while strengthening site clinical research capacity. The studies can also demonstrate whether recruitment, retention and incidence rates are suitable for future prevention trials. Researchers from the Catholic University of Mozambique (UCM), FHI 360 and the Amsterdam Institute for Global Health and Development (AIGHD) collaborated to develop a new clinical research site in Beira, Mozambique, and ascertain HIV incidence.



METHODS

We implemented a cross-sectional survey (N=1016) to estimate HIV incidence using the BED-CEIA assay among women aged 18–35 reporting two or more sexual partners in the past month. This survey served as the screening phase for a cohort study (N=385) to measure HIV seroincidence prospectively over 12 months follow-up per participant. Participants underwent monthly HIV, HSV-2 and pregnancy testing, risk-reduction counseling, and standardized interviews.

KARINE DUBÉ/FHI 360

Community Engagement Event, Beira, Mozambique

RESULTS

At screening, the mean age was 22.9 and the mean number of sexual partners was 2.4 (see Table 1). HIV prevalence was 33.0% (95% confidence interval (CI): 30.1–35.9). Of 334 HIV-positive cross-sectional samples, 304 underwent BED-CEIA testing, of which 38 tested as recent, with a false-recent rate of 1.8% (95% CI: 0.2–3.3). Estimated cross-sectional incidence was 9.2% (95% CI: 6.3–12.1) using the McDougal correction formula and 9.6% (95% CI: 6.5–12.6) using the Hargrove correction formula. The prospective HIV incidence rate was 8.4 per 100 women-years (95% CI: 5.2–12.8), with 21 seroconversions over 251.2 women-years (WY) of follow-up. Prospective HIV incidence was higher among the 18–24 age group (9.1 per 100 WY; 95% CI: 5.4–14.3) than the 25–35 age group (5.7 per 100 WY; 95% CI: 1.2–16.7).

TABLE 1. Measurements of HIV Incidence among Women at Higher Risk for HIV Infection in Beira, Mozambique

	Age 18–24	Age 25–35	Overall
Eligible Population (N)	719	297	1016
Mean age			22.9
Mean # of sexual partners			2.4
HIV Positive (N)	178	156	334
HIV prevalence (95% CI)	24.8% (21.6–27.9)	52.5% (46.9–58.2)	33.0% (30.1–35.9)
Cross-Sectional BED-CEIA Assay			
BED Tested (N)	157	147	304
Recent Infections (N, %)	22 (14.0)	16 (10.9)	38 (12.5)
FRR (95% CI)			1.8% (0.2–3.3)
McDougal corrected (95% CI)	7.1% (4.1–10.1)	16.5% (8.4–24.6)	9.2% (6.3–12.1)
Hargrove corrected (95% CI)	7.4% (4.3–10.5)	17.1% (8.7–25.5)	9.6% (6.5–12.6)
Welte's adjustment (95% CI)	7.3% (3.8–10.7)	17.3% (7.3–26.3)	9.4% (6.0–12.8)
Prospective Incidence			
Eligible Population (N)	309	76	385
HIV seroconversion (N)	18	3	21
Women-years of follow-up (WY)	198.7	52.5	251.2
Incidence Rate per 100 WY (95% CI)	9.1 (5.4–14.3)	5.7 (1.2–16.7)	8.4 (5.2–12.8)

CONCLUSIONS

This population appears to be well-suited for HIV prevention trials, with high HIV incidence estimated cross-sectionally and measured prospectively. Follow-up of the cohort continues, and the site is commencing other synergistic research activities. Intensified prevention programming is needed in Beira.

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