

Men who have sex with men may now be the highest-risk group for HIV in Africa, IAVI study suggests

GUS CAIRNS

Men who have sex with men (MSM) may now be at considerably higher risk of acquiring HIV than other at-risk groups such as female sex workers or young people of either sex, if findings by the International AIDS Vaccine Initiative (IAVI) of HIV incidence at two centres in Kenya can be generalised to other populations.

The study, which compared the Kenyan populations with a largely heterosexual group from South Africa, also found lower-than-expected HIV incidence among female sex workers and their clients. The researchers also found that recruiting MSM into the study was easier than expected, but noted that there was a particularly high drop-out rate in MSM.

They comment that, while MSM 'need urgent risk reduction interventions, and may be a suitable cohort for future HIV prevention studies,' because African MSM face considerable legal and social hurdles in coming forward, 'careful consideration of the counselling and clinical needs, follow-up schedule and social support is vital to ensure continuing research participation.'



The study

The aim of the study was to collect data on HIV and sexually transmitted infection (STI) incidence and risk factors in three populations in Kilifi, a district north of Mombasa, and the Kangemi district of Nairobi, both in Kenya, and from Guguletu township in Cape Town in South Africa.

The researchers recruited 716 people in Mombasa, 653 in Nairobi and 465 in Cape Town. The researchers primarily used participants to recruit their peers in South Africa, where background HIV prevalence (28%) is 10 times higher than in Kenya. In Kenya they recruited attendees at HIV-testing centres, via outreach work in bars and brothels, and via 'snowball' sampling (asking members of a particular group to recruit others from the same group). The original idea had been to collect data on high-risk heterosexuals including sex workers but, as the researchers comment, 'it quickly became apparent that MSM were willing to come forward and participate in HIV prevention research.'

Somewhat different monitoring and follow-up criteria were used in the three centres. In Cape Town, participants were monitored monthly and followed up for 1 year, while in the two Kenyan cohorts participants were monitored quarterly for 2 - 4 years. In Mombasa, participants were examined for STIs at every visit but in Nairobi and Cape Town only examined if they had symptoms. As a result, annual STI incidence was much higher in Mombasa (23%) than in the other two centres (3.7% and 4.4%).

The average age of participants was mid-20s (slightly older in Nairobi); nearly 70% were women in Cape Town, 50% in Nairobi and 36% in Mombasa. Participants in Cape Town were almost entirely heterosexual men and women, and were not sex workers.

In Mombasa, 56% of men (36% of the study population) were MSM; 63% of men said they had sold sex (mainly to other men) and 54% had bought it. Three-quarters of female participants said they were sex workers, while 1 in 20 women said they had bought sex.



In Nairobi, nearly all women were defined as sex workers and 85% of the men had bought sex; 22.5% of the men had had sex with other men and 33% were defined as male sex workers.

There was a high drop-out rate in the study: 13% did not return after their enrolment visit; 37% altogether left the study prematurely. Annual attrition rates were 22% in Cape Town, 20% in Mombasa and 10% in Nairobi.

The results

HIV incidence was high in MSM in the Kenyan centres: annual incidence in MSM was 9.7% in Nairobi and 6.1% in Mombasa (there were only three individuals who said they were MSM in Cape Town, and none contracted HIV).

Annual HIV incidence in women was 3% in Cape Town, 2.7% in female sex workers and 2.3% in non-sex-workers in Mombasa, and only 0.4% - much lower than expected - in Nairobi. Annual HIV incidence in non-MSM was 0.9% in Mombasa and zero in the other two centres.

In a multivariate analysis, predictors of HIV infection included:

- no secondary education v. some: hazard ratio (HR) 3.34
- genital ulcers, yes v. no: HR 4.48
- paid for sex v. not: HR 0.17
- receptive-only anal sex v. no anal sex (in men and women): HR 8.19
- receptive and insertive anal sex v. none: HR 3.55
- insertive-only anal sex v. none: HR 0.88 (non-significant).

Thus, while receptive anal sex was very strongly associated with HIV infection, insertive anal sex was not. The finding that people who paid for sex were more than five times *less* likely to acquire HIV than people who did not was described as 'unexpected'; the researchers suggest that people having paid-for sex may be more wary of HIV and STIs and more likely to use condoms.

The fact that HIV incidence in female sex workers was far lower than expected, especially in Nairobi, is likely to be due to decreasing background HIV prevalence and possibly more use of antiretrovirals. Higher condom use is a less likely explanation, because annual pregnancy rates remained high: the annual pregnancy rate was 18% in women in Nairobi, 14% in Cape Town and 11% in Mombasa.

These are some of the first data on HIV incidence in MSM in Africa, a continent where, as the researchers say, 'The focus of prevention trials in adult Africans has largely been on heterosexual transmission.' They add that a recent UNAIDS report highlights the deficiencies in addressing the needs of MSM and comment that it 'reinforces the importance of closing this gap from both a human rights and public health perspective.'

Price MA, et al. JAIDS 2012;59(2):185-193.

Article courtesy of www.aidsmap.com

SINGLE SUTURE

Ancient Chinese medicine could fight ageing

A flowering Tibetan shrub that tricks cells into thinking they are starving could become a weapon against multiple sclerosis and even old age.

The roots of the blue evergreen hydrangea (*Dichroa febrifuga*) have been used for centuries in traditional Chinese medicine to treat malaria. Now Tracy Keller and colleagues at the Harvard School of Dental Medicine in Boston have found that halofuginone – a chemical based on the roots' active ingredient – blocks immune reactions that can cause disease.

Cells stop the synthesis of non-vital proteins when amino acids are in short supply.

Keller's team discovered that halofuginone mimics such a shortage by blocking an enzyme that feeds one amino acid to the protein-making machinery.

Keller found that the drug triggers a chemical cascade that responds to amino acid scarcity, called AAR. This inhibits the growth of malaria parasites, stops blood cells from making proteins that cause inflammation, and stops the development of specific white blood cells that trigger conditions such as inflammatory bowel disease and multiple sclerosis.

This could make the drug effective against autoimmune disease. But as halofuginone mimics nutrient deprivation, there is another possible use. Animals that receive only just adequate nutrition are known to live longer, partly because diseases which involve inflammation are prevented. That, says Keller, means halofuginone might possibly work as an anti-ageing drug.

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