AIDS 2016

Three key studies in fight against pandemic

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THREE key studies – headed by a leading KwaZulu-Natal-based Aids research organisation – could help revolutionise the fight against HIV infections in young women and girls.

The Centre for the Aids Programme of Research in South Africa (Caprisa) released its findings yesterday, the first day of the International Aids Conference.

The three studies, said the organisation, provided new information on high rates of HIV infection in young women in South Africa resulting from the "cycle of HIV transmission" involving age-disparate sex and on two vaginal bacteria – one increasing HIV vulnerability and another undermining the efficacy of tenofovir-based topical pre-exposure prophylaxis.

In most of southern and eastern Africa, HIV incidence in young women (less than 25 years) continued to remain unacceptably high, said the organisation.

About 380 000 new HIV infections occur in adolescent girls and young women aged 16 to 24 each year.

"Reducing new HIV infections in young women is one of the greatest challenges in southern Africa," said Caprisa director Professor Salim Abdool Karim.

"Based on our results, implementing a combination of targeted interventions to break the cycle of HIV transmission while effectively treating bacterial vaginosis could enhance HIV prevention in women in the highest HIV-burden region of the world."

Sample

But, he admitted, the findings, while surprising, still needed to be confirmed because of, among other reasons, the small sample size.

"These are preliminary findings. We don't know if we will see something similar in women in Kenya, or Malawi or anywhere else, but the findings still need to be explored."

In the first study of 9 812 individuals, the genetic code of HIV from each of 1 589 HIV-positive people was analysed to better understand the relentless spread of HIV in a rural and urban community in South Africa.

It revealed a "cycle of HIV transmission" driven by high rates of new HIV infections in adolescent girls and young women from men on average eight years older.

Many of these men were also partners of similarly aged women who had HIV prevalence rates exceeding 60%.

In a second study investigating the genetic codes of vaginal bacteria of 119 South African women, those with an overgrowth of *Prevotella bivia* had an almost 13 times higher chance of acquiring HIV than those with low levels or absence of the bacterium.

In the third study, an analysis of 3 334 genital bacterial proteins from 688 women showed that three out of five who had a "healthy" lactobacillus-dominant vagina showed that tenofovir gel pre-exposure prophylaxis was effective in preventing HIV, while the women who did not have locatobacillus dominance showed little benefit from the gel.

Follow-up laboratory studies showed that *Gardnerella vaginalis*, which predominates in the vagina when lactobacillus levels are low, absorbs tenofovir, thereby reducing the availability of the drug to prevent HIV infection.

"Since the *Prevotella* and *Gardnerella* bacteria raise the pH, a readily available, quick, simple and cheap test can be used to ascertain which women require treatment for bacterial vaginosis, an imbalance in the vaginal bacteria. Combined, these interventions could have a significant impact on the spread of HIV in women."

Responding to the findings, the director-general of the World Health Organisation, Dr Margaret Chan, said young women in Africa had "missed out" while others had benefited from global progress against Aids.

"The new studies point the way to HIV prevention opportunities that can help rectify this imbalance. The new evidence takes us closer to understanding the very high rates of HIV among young women and adolescent girls in southern Africa," said Michel Sidibé, executive director of UNAids.

Professor Ian Sanne, chief executive of HIV/Aids non-profit organisation Right to Care, said the study confirmed that any infection or inflammation of the vaginal tract increased this route of HIV transmission.