

Objective: The objective of this study was to understand temporal trends in the contribution of different genital tract infections to HIV incidence over 20 years of follow-up in a cohort of high-risk women.

Design: A prospective cohort study.

Methods: We performed monthly evaluations for HIV, vaginal yeast, bacterial vaginosis, *Trichomonas vaginalis*, *Neisseria gonorrhoeae*, nonspecific cervicitis, herpes simplex virus type two (HSV-2), genital ulcer disease (GUD) and genital warts. We used Cox regression to evaluate the association between sexually transmitted infections (STIs) and HIV acquisition over four time periods (1993-1997, 1998-2002, 2003-2007, 2008-2012). Models were adjusted for age, workplace, sexual risk behaviour, hormonal contraceptive use and other STIs. The resulting hazard ratios were used to calculate population attributable risk percentage (PAR%).

Results: Between 1993 and 2012, 1964 women contributed 6135 person-years of follow-up. The overall PAR% for each infection was prevalent HSV-2 (48.3%), incident HSV-2 (4.5%), bacterial vaginosis (15.1%), intermediate microbiota (7.5%), vaginal yeast (6.4%), *T. vaginalis* (1.1%), *N. gonorrhoeae* (0.9%), nonspecific cervicitis (0.7%), GUD (0.8%) and genital warts (0.2%). Across the four time periods, the PAR% for prevalent HSV-2 (40.4%, 61.8%, 58.4%, 48.3%) and bacterial vaginosis (17.1%, 19.5%, 14.7%, 17.1%) remained relatively high and had no significant trend for change over time. The PAR% for trichomoniasis, gonorrhoea, GUD and genital warts remained less than 3% across the four periods.

Conclusion: Bacterial vaginosis and HSV-2 have consistently been the largest contributors to HIV acquisition risk in the Mombasa Cohort over the past 20 years. Interventions that prevent these conditions would benefit women's health and could reduce their risk of becoming infected with HIV.