

## **Evidence of resistance to HIV among continuously exposed prostitutes in Nairobi, Kenya.**

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**OBJECTIVES:** 1) To determine if there is resistance to HIV infection among women with continuous sexual exposure to HIV infected clients.

**METHODS:** Among a cohort of 263 seronegative (SN) prostitutes followed since 1985, a subgroup of 29 were identified who remained SN for 2-6 years despite continued high HIV risk sexual exposure. Absence of HIV in SN women was confirmed by PCR. Epidemiologic studies of SN survival and risk/transmission cofactors as well as laboratory analyses of HLA haplotype were performed. Mathematical models that assumed homogeneity or heterogeneity in susceptibility to HIV infection were fitted to the seroconversion (SC) data.

**RESULTS:** The number of unprotected sexual exposures of these women to HIV infected men was estimated to be 32/year. HIV PCR confirmed that these women were uninfected. Mathematical modelling revealed that models that assume a proportion of the exposed population is less susceptible to HIV fit the data best. The relative risk of HIV SC was reduced 10-fold in women with 2 years of SN follow-up compared to women newly enrolled in the cohort. This association was independent of number of sexual partners, STD cofactors and condom use by Cox regression analysis. MCH class I alleles Aw28 (OR = .21, CI95% .08-.57,  $p < .01$ ) and Bw70 (OR = .3, CI95% .11-.86,  $p < .05$ ) were associated with decreased risk of HIV SC while Aw19 (OR = 3.2, CI95% 1.3-8.2,  $p < .03$ ) was associated with increased risk of SC.

**CONCLUSION:** A small subset of HIV exposed women appear to be resistant to HIV. This resistance is associated with MHC class I alleles, suggesting it may have an immune basis.