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## **HERPES SIMPLEX VIRUS TYPE 2 INFECTION AMONG U.S. MILITARY SERVICE MEMBERS; PUBLIC HEALTH IMPLICATIONS AND OPPORTUNITIES FOR HIV PREVENTION**

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**OBJECTIVES:** The HSV-2 incidence among U.S. military service members increased from 1.76 to 1.94/ 1000 person-years in the period 2000-2004. We sought to characterize the association between HSV-2 and incident HIV-1 infection in this population.

**METHODS:** We performed a matched case-control study using de-identified archived demographic and medical encounter surveillance data linked to archived HIV-1 screening serum specimens from the Defense Medical Surveillance System and the Department of Defense Serum Repository [1]. All Army or Air Force service members with incident HIV-1 infection between June 2000 and February 2004 and available data and serum were included as cases. Two HIV-1 uninfected service member controls were randomly matched to each case by gender and date of case HIV-1 screening test. HIV-1 serostatus was determined by ELISA and confirmed by Western blot. HSV-2 serostatus was determined by ELISA (HerpeSelect 2, Focus Technology, USA) using a cut-off value of  $> 3.5$  [2]. Odds ratios were estimated using conditional logistic analysis. Population attributable risk percent [PAR] of HSV-2 for HIV-1 was estimated [3].

**RESULTS:** HSV-2 prevalence among 456 cases was 30.3% (95% CI=26.1%-34.7%) and higher among women (48.1%) and African-Americans (25.3%). HSV-2 prevalence among 912 controls was 9.7% (95% CI=7.8%-11.8%) and higher among men (10.1%) and African-Americans (25.3%). HSV-2 infection was significantly associated with HIV-1 in univariate (OR=4.20, 95% CI=3.06-5.76) and

multiple analysis (adjusted by demographic data, AOR=3.88, 95% CI=2.66-5.67). PAR of HIV due to HSV-2 was 25%.

**CONCLUSIONS:** The high HSV-2 prevalence among HIV-1 infected population and the strong association of HSV-2 with the incidence of HIV-1 infection may have major public health implications for HSV-2 and HIV prevention. Recent advances in understanding of the complex relationship between HSV-2 and HIV-1 may present opportunities to reduce both the burden of HSV-2 infection and prevent incident HIV-1 infections among U.S. military service members [4,5].



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