No Difference in Antibody Responses to Tetanus Vaccine Among HIV-Exposed and -Unexposed Infants in Botswana

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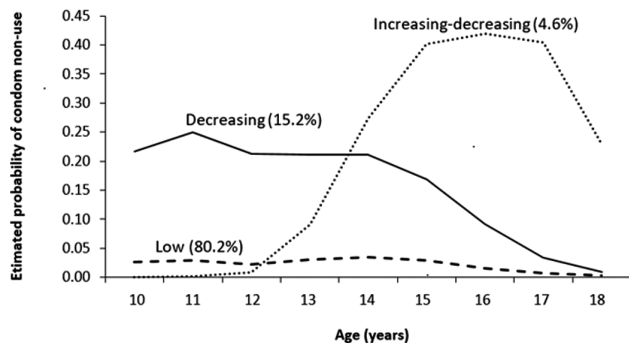Please share how this access benefits you. Submit a story .

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Methods. Study participants included 1285 adolescents, aged 10 to 18 years, who were part of the Mobile Youth Survey, a multiple cohort longitudinal study of adolescents living in the Mobile, Alabama, Metropolitan Statistical Area. Using the SAS macro PROC TRAJ, semiparametric group-based modeling was used to identify trajectories of condom nonuse. Multivariate logistic regression was used to examine variables that predict membership to the trajectories groups.

Results. Results indicated that the best model comprised three distinct trajectory groups of condom nonuse: low, decreasing and increasing-decreasing, and they comprised 80.2%, 15.2% and 4.6% of participants, respectively (Figure1). In the multinomial logistic regression analysis, the low trajectory group was used as the reference group. After controlling for other variables, gender, alcohol use and suicide ideation predicted belonging to the decreasing group. Males (OR = 4.09; P <0.001), alcohol users (OR = 1.69; P = 0.003) and those who had thought of suicide (OR = 1.84; P = 0.004) were more likely to belong to the decreasing group vs. the low group. None of the variables predicted membership to the increasing-decreasing group.

Conclusion. Sexual risk behaviors such as condom nonuse may cluster and follow distinct trajectories. Some trajectories form while adolescents are still young. This has implications for STI/HIV preventive programs, which should pay attention to factors that may influence adolescents' belonging to different trajectory groups of behaviors that put them at risk for STIs HIV infection. Interventions for alcohol use and suicide should be initiated when adolescents are still young.

Figure 1. Trajectory groups for condom nonuse over time with percent membership for each trajectory group. The y-axis represents the estimated probability of being classified in condom nonuse categories.

2247. No Difference in Antibody Responses to Tetanus Vaccine Among HIV-Exposed and -Unexposed Infants in Botswana

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Background. In Botswana, more than 10% of HIV-exposed, uninfected infants (HEU) are hospitalized or die in the first 6 months of life, largely due to infectious causes. Vaccine responses can act as a marker of the immune response to infectious antigens. Previous studies of antibody responses to vaccines in HEU have had conflicting results. We compared antibody titers to tetanus vaccine between HEU and HIV-unexposed infants (HUU), and explored whether tetanus antibody titers predicted risk of hospitalization in the first 2 years of life among HEU.

Methods. 443 HIV-infected and 451 HIV-uninfected mothers and their 453 HEU / 457 HUU live-born infants were followed in a prospective observational study in Botswana ("Tshipidi"). Quantitative tetanus toxoid IgG was measured in plasma samples from 18-month-old infants. Geometric mean antibody titers (GMT) were compared between HEU and HUU infants, and between HEU infants who were or were not hospitalized by age 2.

Results. Plasma was available at 18 months for 39 HEU and 42 HUU infants. Within this subset, there were 15 hospitalizations (12 in HEU) [RR of hospitalization among HEU = 1.34 (*P* = 0.009)]. 73% of hospitalizations overall, and 83% in HEU, were due to infection (primarily pneumonia/bronchiolitis and gastroenteritis). Among infants who had received 3 or 4 doses of tetanus vaccine by 18 months, there were no significant differences in tetanus GMT between HEU and HUU (Fig A). Among HEU who had received 3 or 4 doses of tetanus vaccine by 18 months, there were no significant differences in tetanus GMT between infants who were hospitalized and infants who were not (Fig B).

Conclusion. In this small sample of infants from Botswana, we did not identify differences in antibody responses to tetanus vaccine between HEU and HUU. Although HEU demonstrated an increased risk of hospitalization, response to tetanus vaccine did not appear to be a significant predictor of morbidity. It is possible that cell-mediated immune defects play a larger role than humoral immune defects in the increased susceptibility to infection among HEU.
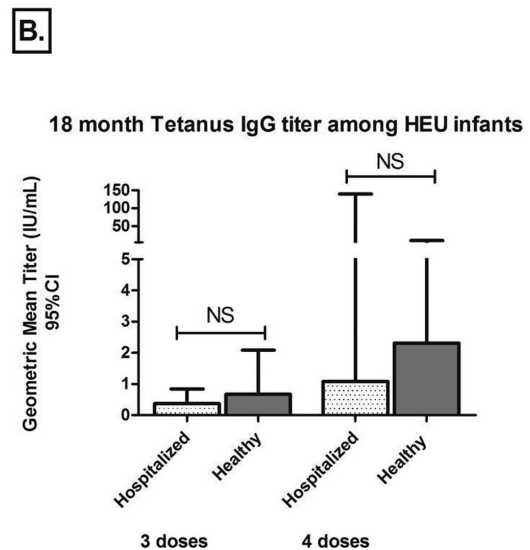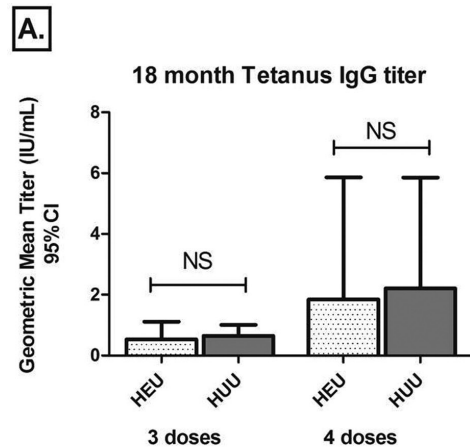
2248. Evaluating Outcomes of Mother-Infant Pairs Using Dolutegravir for Treatment of HIV During Pregnancy

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Background. Dolutegravir (DTG) is a highly efficacious and well tolerated antiretroviral (ART) for the treatment of HIV infection. Although on the preferred treatment list for people living with HIV, it is not a treatment option for pregnant women because data on efficacy, tolerability during pregnancy, and teratogenicity are limited.

Methods. We performed a descriptive cohort analysis of pregnant women from the Drexel Women's Care Center (WCC) receiving DTG for HIV treatment during pregnancy. The Drexel WCC reports maternal and fetal outcomes to the Antiretroviral Pregnancy Registry, a national de-identified database of pregnant women with HIV on ART. Here, we evaluate maternal and fetal outcomes of mother-infant pairs with DTG use during pregnancy between 2015 and 2017.

Results. During the study period, 19 pregnant women used DTG for HIV treatment; 14 had live deliveries and 5 were still pregnant at the time of abstract