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Approval Sheet

Incidence of CMV infections and reinfections in a cohort of women with or at risk for HIV infection.

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Abstract Cover Page

Incidence of Cytomegalovirus (CMV) infections and reinfections in a cohort of women with or at risk for HIV infection

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An abstract of
A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
in partial fulfillment of the requirements for the degree of
Master of Public Health
in Hubert's Department of Global Health
2013

Incidence of Cytomegalovirus (CMV) infections and reinfections in a cohort of women with or at risk for HIV infection.

By Maria Teresa Murguia de Sierra

Cytomegalovirus (CMV) is an important cause of morbidity and mortality in high risk groups, such as patients with HIV. For CMV vaccine development, it is important to explain the relationships among the virus, the host and the immune response to CMV and to understand the complexity of infections and reinfections with different CMV strains in different populations.

Objectives: To perform a secondary data analysis in a cohort sample of 361 CMV-IgG positive women with or at risk for HIV who were selected from the HERS project to describe 1) the prevalence of CMV strain-specific serotypes; 2) the association between these serotypes and different socio-demographic or biologic variables; 3) the sero-conversion rates to new CMV serotypes over a five year follow-up period; and 4) the risk of CMV shedding at the time of sero-conversion events as compared to shedding at other times.

Results: The mean age of these women was 34 years, and 233 (65%) were HIV-positive. AP86 and TO 55 were the most common CMV serotypes detected (30% and 24% prevalence in the study sample, respectively). Independent predictors of strain-specific serotypes included geographic location (AD55), < 13 years of education (TO86) and infections with HIV (AP86) and HSV 2 (TO 86). The sero-conversion rate to any new serotype of CMV was 4.5/100 person-years; sero-conversion rates to AP86 and TO 86 (1.8 and 1.3/100 person-years) were higher than sero-conversion rates to other strains (1 and 0.5/100 person-years for TO55 and AD55, respectively; $p<0.05$). At the sero-conversion event, viral shedding was detected in 13.9% of samples (cervico-vaginal lavage and/or peripheral blood monocytes); the risk of shedding was similar to that detected at randomly selected control-visits (i.e., visits where no type-specific sero-conversions occurred) (17%) or all visits (13%). Overall, the risk of shedding was higher from cervico-vaginal lavage (9.5%) than peripheral blood monocyte's samples (4.8%); $p<0.05$.

Conclusions: In this group of women with or at risk for HIV, AP86 and TO 55 were identified as the most common CMV-specific serotypes; different factors were associated with the presence of different CMV-serotypes and sero-conversion to new epitopes occurred despite prior CMV sero-positivity. This information may help to direct the choice of immune-protective strategies to prevent CMV in similar high risk populations.

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Acknowledgments

A special acknowledgment to Sasha Guo, for special assistance with data analysis and to the HERS Group.

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