

HLA-G And Mother-child Perinatal HIV Transmission

Luo, M; Czarnecki, C; Ramdahn, S; Embree, J.; Plummer, FA

Date: 2013-04

Abstract:

Transplacental passage is a well-known phenomenon in HIV infection and immune responses at the maternal-fetal interface play a critical role in perinatal mother-to-child HIV transmission (MCHT). The high expression of HLA-G at the maternal-fetal interface and its role in mediating immune tolerance suggest that it could play an important role in MCHT. We investigated the role of HLA-G polymorphism in perinatal HIV transmission in 348 ART naive mother-child pairs enrolled in a mother-child HIV transmission cohort, established in Nairobi, Kenya in 1986. Among the 348 children born to 266 HIV+ mothers, 258 were uninfected and 90 became infected perinatally. HLA-G exons 2 and 3 of 266 mothers and 251 children were sequenced and genotyped. Among 14 HLA-G alleles identified, only 4 alleles have a phenotype frequency above 10%. Correlation analysis showed that HLA-G(*)01:03+ mothers were less likely to perinatally transmit HIV-1 to their children ($p=0.038$, Odds ratio:0.472, 95%CI:0.229-0.973). Mother-child HLA-G concordance was not associated with the increased perinatal HIV transmission. There was no significant difference in the general health between the transmitting mothers and the mothers who did not transmit HIV to their children.