

Placental weight and placental weights: their relationship to HIV-1 infection

Gichangi, PB; Nyongo, AO; Temmerman, M

Abstract:

The relationship between placental characteristics, including weight and inflammation, and pregnancy outcome was examined as part of a case control study looking into the impact of maternal HIV-1 infection on pregnancy outcome. Cases defined as low birth weight (< 2500g) or stillbirth deliveries, were compared to controls defined as mothers who delivered a live born neonate weighing 2500g or more. The mean placental weight and the mean foetal/placental weight ratio were significantly lower in cases (n = 253) than in controls (n = 216) (p < .05). Placental inflammation (chorioamnionitis) was significantly associated with prematurity (p < .001) and with stillbirth (p < .05), maternal HIV-1 antibody being a risk factor for chorioamnionitis in the preterm group. These data support a correlation between placental weight and pregnancy outcome, and suggest that maternal HIV-1 infection is a risk factor for chorioamnionitis in HIV-1 seropositive preterm deliveries. PIP: In 1988, researchers compared data on 796 low birth weight (LBW) (500-2500 gm) infants and stillborns (cases) with data on 71 live-born infants weighing more than 2500 gm (controls) to examine the effect maternal HIV-1 infection has on the association between maternal placental characteristics and pregnancy outcome. 3.1% of control mothers of preterm infants, 7.7% in infants small for gestational age (SGA), and 11.7% for mothers of stillborns were HIV-1 seropositive. HIV-1 antibody status was linked independently with preterm birth (odds ratio [OR] = 2.1), SGA infants (OR = 2.3), and fetal death (OR = 2.7). The mean and standard deviation of gestational age and fetal and placental weight and the fetal/placental weight (F/P) ratio were much lower in LBW infants and stillborns (p .001). Mean placental weight in SGA infants born to HIV-1 seropositive mothers was significantly higher than that of SGA infants born to HIV-1 negative controls (487 gm vs. 443 gm; p .05), resulting in a lower F/P ratio among SGA infants of HIV-1 seropositive mothers (4.8 vs. 5.2; p .05). Moderate to severe chorioamnionitis, villitis, and funisitis (all signs of placental inflammation) were associated with prematurity (p .001) and stillbirths (p .05). HIV-1 infection was strongly linked to moderate to severe chorioamnionitis (31% vs. 14%; p .05; OR = 6.1) among preterm infants. These findings strengthen the belief that cumulative immunosuppressive effects of HIV-1 infection and pregnancy assist increasing infection, resulting in chorioamnionitis and possible subsequent prematurity or stillbirth