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Poster Abstract – P55

Antiretroviral therapy and pregnancy: effect on cortical bone status of HIV-infected women

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Purpose of the study

Vertical transmission of HIV can be almost eliminated by an appropriate combination of preventative measures, which include the use of combination antiretroviral therapy (ARV) during pregnancy, elective cesarean delivery, and avoidance of breastfeeding. Although current ARV demonstrated to be very effective to control virus infection, it has numerous side effects, including negative repercussions on bone mass. Currently there are no data regarding the bone status of HIV-infected women who received ARV during pregnancy. The aim of this study was to evaluate cortical bone status at delivery in a group of HIV-infected women who received ARV during pregnancy, to monitor the changes occurring during the first year post-partum and to compare the results with those obtained in healthy mothers.

Methods

We studied 17 HIV-infected and 55 HIV-uninfected healthy women within 3 days from delivery, at 4 and 12 months postpartum (median age 36.4 years). The majority (68%) of the HIV-infected mothers was on ARV containing two nucleoside reverse transcriptase inhibitors (NRTI) and a protease inhibitor (PI), and 16% was on a regimen containing two NRTIs and two PIs. Other ARV regimens included the use of two NRTIs and one non-NRTI (10%), one NRTI plus one PI (3%), or two NRTIs and three PIs (3%). The median (range) exposure to ARV during gestation was 14 (5-35) weeks. The great majority (91%) of the women showed an undetectable viral load (< 50 cp/mL) at delivery. Median CD4 number at delivery was 610 (128 to 1415). Cortical bone status was evaluated by quantitative ultrasonography at the mid-tibia, and bone measurements were expressed as the speed-of-sound (SOS).

Summary of results

HIV-infected women after delivery had a median SOS of 3985 (3567–4242) m/s, while the median SOS of healthy women was 4025 (3643–4250). The difference was not significant ($t = 0.39$; $P = 0.69$). SOS measurements at baseline, at 4, and at 12 months are shown in Table 1. SOS values did not change significantly in the HIV-infected mothers' group ($F = 0.02$; $P = 0.88$), while they changed over time in the healthy mothers' group ($F = 0.15$; $P = 0.02$). No significant differences were observed between ARV-exposed and control subjects at 4 and 12 months.

Conclusion

Our data suggest that ARV during pregnancy and the first year after delivery does not affect negatively cortical bone status and that QUS results are equivalent to those of HIV-negative healthy women.

Variable	HIV-infected women	Healthy women
Subjects (n)	17	55
Age of delivery (y)	33.8 (23.7–40.9)	35.2 (21.8–42.3)
Height (cm)	163.5 (151–173)	163 (150–178)
Weight baseline (kg)	65 (55–92)	72 (53–94)
Weight 4 months (kg)	58 (47–88)	63 (45–93)
Weight 12 months (kg)	59 (50–84)	61.5 (46.5–90)
SOS baseline (m/s)	4089 (3821–4242)	4013 (3070–4215)
SOS 4 months (m/s)	4043 (3814–4337)	4015 (3672–4191)

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SOS 12 months (m/s)	4038 (3814–4337)	3958 (3713–4176)
SOS z-score baseline	1.6 (–1.1–3.0)	0.8 (–2.4–2.7)
SOS z-score 4 months	1.2 (–1.1–3.6)	0.9 (–3.0–2.5)
SOS z-score 12 months	1.2 (–1.3–3.7)	0.5 (–1.8–2.4)
