

Abstract

BACKGROUND: The correlation between the presence of HIV-1 in maternal cervicovaginal secretions and in the infant's oro-pharyngeal secretions at birth, and mother-to-child HIV transmission (MTCT) were examined to obtain a better understanding of its mechanism.

METHODS: Women without medical and obstetrical complications, living within a reasonable distance of the government hospital in Mombasa, Kenya, were recruited after informed consent.

Maternal and infant characteristics were collected. Polymerase chain reaction was used to detect HIV-1 in cervico-vaginal and oro-pharyngeal secretions. Infants were tested for HIV-1 by polymerase chain reaction within 48 h and at 6 weeks after delivery. **RESULTS:** Between April 1998 and April 1999, 228 woman-infant pairs were included in the study. HIV-1 DNA in cervico-vaginal secretions was independently associated with HIV-1 maternal viral load and with infant birth-weight, whereas HIV-1 RNA was associated with maternal viral load and maternal age. HIV-1 DNA in the oropharyngeal secretions was also independently associated with maternal viral load. MTCT rate at the age of 6 weeks was 23.6%. Intrapartum and early postpartum HIV transmission was independently associated with maternal viral load [adjusted odds ratio (OR), 1.6; 95% confidence interval (CI), 1.0-2.7], detection of HIV-1 RNA in cervico-vaginal secretions (adjusted OR, 3.2; 95% CI, 1.5-7.3) and of HIV-1 DNA in oro-pharyngeal secretions (adjusted OR, 3.2; 95% CI, 1.1-9.0). **DISCUSSION:** As far as is known, this is the first study showing that infant exposure to HIV-1 in the birth canal and the presence of HIV-infected cells in the infant's oropharyngeal cavity are independently associated with intrapartum and early postpartum MTCT. It supports the hypothesis that MTCT could occur through the oral route.