Abstract

Introduction: Type 1 human immunodeficiency virus (HIV-1) is a lymphotropic and neurotropic retrovirus. Thus, it causes immunological and neurological alterations particularly in children. In the neonatal period the maturational changes of the central nervous system occur rapidly, and their alteration can be reflected in processes such as the sleep-awake pattern. Objective: To evaluate sleep organization, EEG and respiratory pattern in newborns to HIV-1 positive mothers. Methods: 22 infants underwent polysomnography. Delta brushes number in REM and NREM sleep, duration of interburst interval and interhemispheric synchrony were used to calculate EEG maturation. Analysis of the sleep architecture was based on polysomnographic sleep percentage of REM, NREM and transitional sleep to total sleep time. Results: The difference between electroencephalographically calculated and clinically calculated conceptional age was less than two weeks. Percentages of REM and NREM sleep ranged from 39-64 and 30-58 with a median of 52.5 and 36.5 respectively. Concordance was lower in newborns who had high transitional sleep percentages, compared to that in newborns who did not have such characteristic (p<0.05). Discussion: Despite intrauterine exposure to HIV-1 and to antiretroviral drugs we did not observe a significant effect on EEG maturation. The decreased concordance in newborns with high transitional sleep percentages would suggest an alteration in the maturation process, but this aspect itself is not sufficient to consider that intrauterine exposure to HIV-1 and antiretrovirals affect the entire sleep architecture. Future studies should clarify whether the decreased concordance between behavior and NREM sleep is replicable.

Keywords

Central Nervous System, Electroencephalography, HIV, Maternal Exposure, Newborn, Polysomnography, Pregnancy, Sleep.