Abstract

HIV/AIDS in Sub-Saharan Africa has resulted in a major increase in the number of HIV infected children and orphans. HIV infected children are at risk of developmental delays and growth impairments which is further compromised by poor living conditions. Institutionalisation is not the preferred method of caring for children in need, however, it does provide a stable environment, shelter, nutrition and medical care.

Objective: To compare the anthropometric measurements and neurodevelopment of HIV infected and HIV uninfected children who were vertically infected, not on antiretroviral treatment and residing in institutions in Gauteng, South Africa.

Method: A comparative, longitudinal study of 16 HIV infected and 24 HIV uninfected children between the ages of 16 and 42 months. The Bayley Scale of Infant Development II (MDI and PDI) was used to evaluate neurodevelopment. The children's mean z-scores for weight-for-age, height-for-age, weight-for-height and head circumference-for-age were calculated. Evaluations were carried out at two time points, seven months apart.

Results: The HIV infected children scored significantly lower than HIV uninfected children at both time points, in neurodevelopmental (MDI $p<0.02$ and $p<0.00$; PDI $p<0.00$ and $p<0.00$) and anthropometric measurements for-age (weight $p<0.00$ and $p<0.01$; height $p<0.00$ and $p<0.00$; head circumference

p<0.00 and p<0.07). Both groups (HIV infected and HIV uninfected) showed a significant improvement over time regarding to their weight-for-age (p<0.00; p<0.01) and head circumference-for-age (p<0.01 and p<0.08). The height-for-age showed no significant improvement in the HIV infected group (p>0.2) but did in the HIV uninfected group (p<0.03). There was a severe delay in the mental abilities of both the HIV infected and HIV uninfected children and the motor abilities of the HIV infected children, which did not change over time, but the motor abilities of the HIV uninfected children did improve significantly.

Conclusion: The HIV virus affects the neurodevelopment and growth of HIV infected children. Both groups showed an improvement over time in their growth particularly weight-for-age indicating that they may have benefited from their institutionalisation.

Key words

HIV/AIDS, orphans, children, neurodevelopment, anthropometry.