Neurodevelopmental Assessments to Screen for HIV Encephalopathy in Newly Diagnosed Infants not on ART in Mozambique

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Background
• Encephalopathy represents a common and serious manifestation of pediatric HIV infection. Approximately 18% of HIV-infected children have HIV-associated encephalopathy (HIVE).1
• HIVE has not been extensively described in infected infants less than 12 months of age.2
• Children with HIVE have worse outcomes, including increased morbidity and mortality.3

Aims
1. Describe the baseline clinical and demographic profile of a cohort of HIV-infected infants diagnosed during hospital admission and not yet on ART.
2. Assess their neurodevelopmental clinical presentation
3. Determine the prevalence of presumptive HIVE
4. Determine clinical and demographic variables associated with HIVE

Methods
• Retrospectively analyzed routine, standard of care hospitalization data from the Lactentes wards at Hospital Central de Maputo (HCM) and Hospital Central de Beira (HCB)
• Both sites have point-of-care DNA PCR for timely, definitive infant HIV diagnosis
• Criteria for inclusion:
  a) HIV-infected children aged <12 months
  b) not currently on ART
  c) admitted between Jan 1, 2019 - June 30, 2019
• Assessments of development were made using WHO Integrated Management of Childhood Illness (IMCI) milestone tables4
• WHO Criteria for HIVE Diagnosis5
  • One of the following clinical events progressing over at least two months in the absence of another illness: a) failure to attain, or loss of developmental milestones, OR b) progressive impaired brain growth demonstrated by stagnation of head circumference, OR c) acquired symmetrical motor deficit accompanied by two or more of the following: paresis, pathological reflexes, ataxia and gait disturbance
  • These criteria were adapted for a presumptive HIVE diagnosis for this inpatient study without post-discharge follow-up
  • Statistical analyses were performed in Excel® and SPSS®

Results
• A total of 31 patients were included in the study.
• Mean age was 5 months, with 15 females and 16 males.
• Pneumonia/ Bronchopneumonia/ Bronchiolitis (26%) and Sepsis (19%) were the most common primary hospitalization diagnoses.
• Respiratory illnesses accounted for approximately 50% of the diagnoses.
• 8 patients were diagnosed with presumptive HIVE. These patients had delayed or lost milestones as well as microcephaly or pathological reflexes

Limitations
• Delayed milestones were seen in 70% patients included
• HIVE(+) were, on average, delayed in 2.75 categories vs 1.21 in the HIVE (-) group.
• The prevalence of delayed milestones was approximately 2x higher in the HIVE(+) group across all milestone categories.

Conclusions
• HIVE prevalence is high in newly diagnosed infants (28.5%), particularly in those with risk factors for in-utero transmission
• Infants with HIVE need comprehensive care that includes ART and physical/occupational therapy where available

References