Low utilization of TB-LAM for TB screening among children under five with advanced HIV disease in Uganda: a descriptive analysis of surveillance data

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Introduction

WHO classifies all children living with HIV (CLHIV) aged <5 years, at diagnosis, as having advanced HIV disease (AHD). CLHIV with AHD and/or those with CD4 counts of 100 – 200 cells/mm3 are eligible for TB screening using lateral flow urine lipoarabinomannan assay (TB-LAM). We analyzed data on TB screening using TB-LAM (Determine™ TB LAM Ag) in CLHIV <5 years in Uganda to understand TB-LAM utilization in relation to current WHO recommendations on AHD.

Methods

We determined the number and proportion of CLHIV aged <5 years active in care (new and old) with: baseline CD4 counts, ‘confirmed’ AHD (CD4 count <200 cells/mm3), and TB-LAM tests conducted, deaths during treatment and reported causes of death, during October 2020–September 2021, from Uganda’s District Health Information Software (DHIS2). There was no data on patient history and chest X-rays in DHIS2.

Results

There were 9,840 CLHIV aged <5 years in HIV care, and 33% (3,304/9,840) newly initiated ART. Of the 3,304 newly ART initiated, 40% (1,310/3,304) were designated as AHD and 29% (946/3,304) had baseline CD4-counts. TB-LAM results were available for 11% (105/946) of children with baseline CD4 count < 200 cells/mm3 of whom 30% (32/105) tested positive and 88% (28/32) started TB treatment.

There was no significant difference in TB-LAM positivity between children aged <1 year (8/18, 44%) and children aged 1–4 years (24/87, 28%) (P=0.113).

Mortality was 3% (301/9,840) of all CLHIV aged <5 years in care. TB contributed 20% (20/100) to reported causes of death, and TB-related mortality was higher in children aged <1 year compared to children aged 1– 4 years (35% versus 13%) (P=0.009).

Conclusion

Two-fifths of CLHIV <5 years initiating ART were designated as AHD despite guidance that all should be AHD. This, coupled with low baseline CD4-count testing, led to low TB-LAM utilization for children <5 years despite high TB related morbidity and mortality in this age-band. Considering the high yield on TB-LAM testing, explicit guidance on TB-LAM screening for TB in AHD for children aged <5 years newly tested HIV positive is critical to improve TB indicators in this age-band.