OA-208 EVALUATING THE IMPACT OF COMPUTER-ASSISTED X-RAY DIAGNOSIS AND OTHER TRIAGE TOOLS TO OPTIMISE XPERT ORIENTATED COMMUNITY-BASED ACTIVE CASE FINDING FOR TB AND COVID-19 (XACT-19)

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Background Almost 40% of persons newly diagnosed with TB are unreported. Detecting cases in TB/HIV endemic communities have been restricted by a lack of sensitive and user-friendly point-of-care (POC) diagnostic tools. Computer-aided detection (CAD) has been recommended by the WHO for screening for TB, however, implementation of CAD in community-based active case finding (ACF) is unclear. We aimed determine the adjunctive role of CAD in Xpert-orientated community-based ACF for TB.

Methods In this ongoing, EDCTP-funded (RIA2020S-3295), open-labelled randomised controlled trial (RCT), high-risk persons (symptomatic and/or HIV-infected) with presumed TB were recruited from TB/HIV endemic communities in South Africa and Zambia (Zimbabwe is an additional site). Using a low-cost mobile van staffed by three healthcare workers and equipped with an ultra-portable x-ray and GeneXpert® system, participants were randomized into either 'CAD + POC Xpert' (Arm 1: CAD followed by Xpert MTB/RIF Ultra in CAD-positive participants using a CAD4TB v7 threshold of 10 [South Africa] and 50 [Zambia] based on prior population-specific calibration), or 'POC Xpert alone' (Arm 2: POC Xpert MTB/RIF Ultra only). The primary outcome was time to detection of microbiologically proven TB (Xpert and/or culture positivity). Here we present an interim trial progress report.

Results From Feb 2022, a total of 505 participants have been enrolled (256 [50.7%] from South Africa and 249 [49.3%] from Zambia). 26.9% (136/505) of participants were HIV-infected (median CD4 of 609). 33/505 (6.5%) tested positive for TB (25/256 [9.8%] in South Africa and 8/249 [3.2%] in Zambia). 15 participants underwent screening to detect 1 case of TB. Of TB-positive participants, 7/33 (21.2%) were smear positive.

Conclusion Community-based ACF detected a high burden of TB, of which a significant minority (~20%) was probably infectious. These data have implications for ACF strategies in high burden settings.

OA-223 MYOCARDIAL STRUCTURE AND FUNCTION ASSESSED BY CARDIAC MAGNETIC RESONANCE IN ADOLESCENTS WITH PERINATAL-ACQUIRED HIV INFECTION TAKING ANTIRETROVIRAL THERAPY

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Background HIV in adolescents with perinatal HIV (PHIV) is associated with an increased risk of cardiac disease, which is not well characterised. We characterised myocardial structure and function in adolescents with PHIV and established on antiretroviral therapy (ART) using advanced imaging with cardiac magnetic resonance (CMR).

Methods We conducted a cross-sectional study in PHIV aged 10–19 years taking antiretroviral therapy and an HIV-negative comparison group in Harare, Zimbabwe. Participants underwent a 3-Tesla CMR examination including assessment of myocardial structure and function (cine) and myocardial fibrosis (late gadolinium enhancement, LGE). Groups were compared using unpaired t-test, and potential predictors were assessed with multiple linear regression.

Results Forty-four participants were included in the analysis (n= 23 with HIV; 52% female and 21 uninfected controls; 48% female]). Participants with PHIV were older [median (IQR) 18 (16–19) vs 15 (13–17) years; p=0.002] compared to uninfected controls. They also had lower height-for-age and weight-for-age z-scores [Mean (SD), -1.84 (1.0) vs 1.17 (1.0); p=0.044] and [-1.35 (1.4) vs -0.21 (1.4); p=0.011] respectively. In the PHIV group, median age at HIV diagnosis was 5.5 (IQR, 4–8) years and 18 (82%) were virally suppressed (<19 copies/ml). The PHIV group had a larger indexed left ventricular (LV) mass [Mean (SD), 39.2 (5.4) vs 35.3 (6.4) g/m2; p=0.047] and LV end-diastolic volume [75.0 (8.2) vs 67.5 (12.5) mL/m2; p=0.026] compared to controls. LV and right ventricular systolic function measured by either ejection fraction or strain was normal in both groups, and no LGE was observed. No association of LV systolic function was observed with age, sex, and HIV viral load.

Conclusion In this interim analysis, an increased indexed LV mass and end-diastolic LV volume in the PHIV group relative to those HIV-negative may suggest LV structural changes. Recruitment is ongoing and comprehensive regression modelling shall be performed.

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