



Communication and Marketing Department
Isebe loThungelwano neNtengiso
Kommunikasie en Bemerkingsdepartement

Private Bag X3, Rondebosch 7701, South Africa
Welgelegen House, Chapel Road Extension, Rosebank, Cape Town
Tel: +27 (0) 21 650 5427/5428/5674 Fax: +27 (0) 21 650 5628

www.uct.ac.za

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Adolescents with perinatally acquired HIV at increased risk of TB disease

Adolescents with perinatally acquired HIV (APHIV) had a fourfold increased risk of tuberculosis (TB) disease despite access to antiretroviral therapy (ART), a new study has revealed.

The study was carried out at the South African Medical Research Council (SA-MRC) Unit at Red Cross War Memorial Children's Hospital from July 2013 to October 2018. It enrolled 496 HIV positive and 103 HIV negative adolescents aged nine to 14 years already accessing HIV care. Symptom screening, chest radiograph, viral load, CD4 count, QuantiFERON [test for TB infection] and sputum for gene-Xpert, microscopy, culture and sensitivity tests were performed annually.

Reporting their findings in the *Journal of the International AIDS Society*, the University of Cape Town (UCT), Stellenbosch University and Charité – Universitätsmedizin Berlin scientists found that despite similar rates of *Mycobacterium tuberculosis* (*M. tb*) infection, there was a higher rate of TB disease in APHIV on ART compared to HIV negative adolescents.

Lead author, Dr Lisa Frigati, said these findings appeared driven mainly by low CD4 counts and high viral load, highlighting the importance of screening for TB in APHIV failing ART. "These findings also highlight that TB is common and remains an important cause of morbidity among APHIV.

"The incidence of TB in APHIV in our study was very high, at 2.2 per 100 years compared to HIV negative adolescents which was 0.3 per 100 years. This may be due to the extremely high prevalence of TB in Western Cape communities where most of these adolescents live or high exposure in households with many people living with HIV; poor adherence to ART; and those with chronic lung disease may also be overtreated for TB because they have chronic symptoms and abnormal x-rays," she noted.

Frigati said this was the first study to report the incidence of confirmed TB disease in APHIV.

Professor Heather Zar, the chair of the Department of Paediatrics and Child Health and the director of the SA-MRC Unit on Child and Adolescent Health at the UCT Faculty of Health Sciences, said these results highlight the need for adolescents living with HIV to be comprehensively evaluated for TB, including with rapid molecular diagnostics and culture.

"In addition, strategies to prevent TB such as TB preventive therapy as well as strategies to enhance treatment adherence should be strengthened. These findings also emphasise the need to integrate HIV and TB adolescent programmes," Zar said.

Professor Landon Myer, director and head of the School of Public Health and Family Medicine at UCT, said adolescence is a period of increased risk for both *M. tb* infection and TB disease, compared to the pre-adolescent period.

"Globally, an estimated 1.8 million people between the ages of 10 to 24 developed TB in 2012, with 534 000 of these living in Africa. Adolescents are also more likely to be infectious than younger children. HIV is a risk factor for *M. tb* infection and TB disease," he shared.

[Read the full paper.](#)

ENDS

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Ridovhona Mbulaheni

Media Liaison Assistant

Communication and Marketing Department

University of Cape Town

Rondebosch

Tel: (021) 650 2333

Cell: (064) 905 3807

Email: ridovhona.mbulaheni@uct.ac.za

Website: www.uct.ac.za