

## MRC/UVRI PUBLICATIONS DIGEST – SEPTEMBER, 2016

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Joseph O Mugisha, Janet Seeley and Hannah Kuper. Population based haematology reference values for older people in rural South-West Uganda. [BMC Res Notes](#). 2016 Sep 7;9 (1):433. doi: 10.1186/s13104-016-2217-x.

**Background;** Haematology reference values are needed to interpret haematology results and make clinical decisions, but these have not been established for old people in sub-Saharan Africa. The objective of this study was to establish haematology reference values for people aged 50 years and above in Uganda, to compare the haematology reference values for those aged 65 years and over with those less than 65 years and to compare these haematology reference values with established haematology reference values for old people from high income countries.

**Methods;** A total of 1449 people aged 50 years and above were recruited from the Medical Research Council/Uganda Virus Research Institute general population cohort between January 2012 and January 2013 (response rate 72.3 %). From the blood samples collected, we did haematology, HIV testing and malaria tests. We also obtained stool samples and tested them for hookworm infection. Questionnaire data were obtained through interviews. In the analysis, we excluded those with HIV infection, malaria infection, hookworm infection and those not feeling well at the time of recruitment. Medians and reference ranges for 12 haematology parameters were determined, based on the Clinical Laboratory and Standards institute's guidelines.

**Results;** In total, 903 people aged 50 years and above were included in the analysis with the majority 545 (60.3 %) being female. Men had significant difference in median haemoglobin, haematocrit, erythrocytes counts and white blood cells counts, which were higher than those of women. Women had significant difference in mean platelet counts and neutrophil percentages which were higher than those of men. Comparing those aged 65+ and those aged less than 65 years, the following parameters were significantly lower in those aged above 65 years: haemoglobin, haematocrit, erythrocytes counts, platelets and mean corpuscular volume. Compared to the reference intervals from old people in high income countries, all the haematology parameters from our study population were low.

**Conclusion;** The differences between haematology reference ranges in old people compared to adults and the very old (65+) compared to those between 50 and 65 call for more population based studies using nationwide surveys to be carried out among old people in other study settings in Uganda and the rest of Africa to explore the differences in haematology reference ranges between these different age groups with a view of establishing whether there is need to have separate reference range for these different categories of old people.

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Prendergast AJ, Bwakura-Dangarembizi M, Mugenyi P, Lutaakome J, Kekitiinwa A, Thomason MJ, Gibb DM, Walker AS; ARROW Trial Team. Reduced bacterial skin infections in HIV-infected African children randomized to long-term cotrimoxazole prophylaxis. *AIDS*. 2016 Sep 20.

### OBJECTIVE:

To evaluate whether cotrimoxazole prophylaxis prevents common skin conditions in HIV-infected children.

**DESIGN:**

Open-label randomized controlled trial of continuing versus stopping daily cotrimoxazole (post-hoc analysis).

**SETTING:** Three sites in Uganda, one in Zimbabwe.

**PARTICIPANTS:**

758 children aged >3 years receiving antiretroviral therapy (ART) for >96 weeks in the ARROW trial were randomized to stop (n=382) or continue (n=376) cotrimoxazole after median (IQR) 2.1(1.8,2.2) years on ART.

**INTERVENTION:** Continuing versus stopping daily cotrimoxazole.

**MAIN OUTCOME MEASURES:**

Nurses screened for signs/symptoms at 6-weekly visits. This was a secondary analysis of ARROW trial data, with skin complaints categorized blind to randomization as bacterial, fungal, or viral infections; dermatitis; pruritic papular eruptions (PPE); or other (blisters, desquamation, ulcers, urticaria). Proportions ever reporting each skin complaint were compared across randomized groups using logistic regression.

**RESULTS:**

At randomization, median (IQR) age was 7(4,11) years and CD4 was 33%(26,39); 73% had WHO stage 3/4 disease.

Fewer children continuing cotrimoxazole reported bacterial skin infections over median 2 years follow-up (15% versus 33%, respectively;  $P < 0.001$ ), with similar trends for PPE ( $P = 0.06$ ) and other skin complaints ( $p = 0.11$ ), but not for fungal ( $P = 0.45$ ) or viral ( $P = 0.23$ ) infections or dermatitis ( $P = 1.0$ ). Bacterial skin infections were also reported at significantly fewer clinic visits (1.2% vs 3.0%,  $P < 0.001$ ). Independent of cotrimoxazole, bacterial skin infections were more common in children aged 6-8 years, with current  $CD4 < 500$  cells/mm, WHO stage 3/4, less time on ART and lower socioeconomic status.

**CONCLUSIONS:**

Long-term cotrimoxazole prophylaxis reduces common skin complaints, highlighting an additional benefit for long-term prophylaxis in sub-Saharan Africa.

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Tino Salome, Ivan Kasamba, Billy Nsubuga Mayanja, Patrick Kazooba, Jackson Were, Pontiano Kaleebu, Paula Munderi and on behalf of the CoLTART study team. The effect of Tenofovir on renal function among Ugandan adults on long-term antiretroviral therapy: a cross-sectional enrolment analysis. *AIDS Res Ther* (2016) 13:28 DOI 10.1186/s12981-016-0113-z

**BACKGROUND:**

WHO recommends using Tenofovir containing first line antiretroviral therapy (ART), however, Tenofovir has been reported to be associated with renal impairment and dysfunction. We compared renal function among individuals on Tenofovir and those on non-Tenofovir containing ART.

**METHODS:** In a cross-sectional study of HIV-Positive adults on ART, at enrolment into a prospective cohort to study the long-term complications of ART in Uganda, information on biophysical measurements, medical history, clinical examination and renal function tests

(RFTs) was collected. Fractional Tubular phosphate reabsorption and estimated glomerular filtration rate (eGFR) were calculated. Mean values of RFTs and proportions with abnormal RFTs were compared between non-Tenofovir containing (Non-TDF) and Tenofovir containing (TDF-ART) ART regimen groups using a general linear regression model. Durations of TDF exposure were also compared.

**RESULTS:** Between July 2013 and October 2014, we enrolled 953 individuals on ART for 6 or more months, median duration on ART was 9.3 years, 385 (40.4 %) were on non-TDF and 568 (59.6 %) on TDF-ART regimens. The proportion of participants with Proteinuria (>30 mg/dl) was higher among the TDF-ART group than the non-TDF ART group. However, in multivariable analysis, there were no significant differences in the adjusted mean differences of eGFR, serum urea, serum creatinine, fractional tubular reabsorption of phosphate and serum phosphates when patients on TDF-ART were compared with those on non-TDF containing ART. There were no differences in renal function even when different durations on Tenofovir were compared.

**CONCLUSIONS:** We found no differences in renal function among patients on Tenofovir and non-Tenofovir containing ART for almost a decade. Tenofovir based first line ART can therefore safely be initiated even in settings without routine renal function monitoring.

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**Rukundo GZ, Kinyanda E, Mishara B: Clinical correlates of suicidality among individuals with HIV infection and AIDS disease in Mbarara, Uganda. *African Journal of AIDS Research* 2016; 15(3):227-232.**

**ABSTRACT;** The association between suicidality and HIV/AIDS has been demonstrated for three decades, but little is known about risk factors that can help understand this association and help identify who is most at risk. Few research studies have been conducted in sub-Saharan Africa, a region that accounts for more than 70% of the HIV global burden. This paper describes clinical risk factors for suicidality among individuals with HIV infections and AIDS disease in Mbarara, Uganda.

In this study, suicidality includes both suicidal ideation and suicidal attempts. A cross-sectional survey was conducted with 543 HIV-positive individuals aged 15 years and above, recruited from 2 HIV specialized clinics in Mbarara. Using logistic regression analysis, factors significantly associated with suicidality at 95% confidence interval were identified. The rate of suicidality was 10% (n = 54; 95% CI: 5.00-15.00).

Risk factors for suicidality were: perception of poor physical health (OR 2.22, 95% CI 1.23-3.99, p = 0.007), physical pain (OR 1.83, 95% CI 1.01-3.30, p = 0.049), reducing work due to illness (OR = 2.22, 95% CI 1.23-3.99, p = 0.004) and recent HIV diagnosis (OR 1.02, 95% CI 1.01-1.03, p = 0.001). These findings suggest that HIV/AIDS in south-western Uganda is associated with a considerable burden of suicidality.

HIV is associated with several clinical factors that increase vulnerability to suicidality. There is need for more appropriate interventions targeting these clinical risk factors, systematic suicide risk assessment and management of suicidal ideation and behaviors in HIV care.