

In this issue...

In our feature article this month we highlight the recent paper in *Clinical Infectious Diseases* that shows that South African women with HIV subtype-C experience rapid disease progression, with up to 70% needing to initiate ART within 1 year of being infected under current guidelines.

On page 2, we summarise Salim Abdool Karim's opening plenary at the 20th IAS conference in Melbourne and pay tribute to the AIDS community colleagues who lost their lives in flight MH17.

CAPRISA's contributions to Mandela day are highlighted on page 3. We also congratulate Dr Archary and Dr Liebenberg on receiving the DST-NRF Research Career Advancement Fellowship and profile CAPRISA's research fellow, Mr Kasavan Naidoo.



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Rapid disease progression in women infected with HIV-1 subtype C

Results from the CAPRISA 002 Acute Infection Study were published in the journal *Clinical Infectious Diseases* this month and show that women infected with HIV-1 subtype C experience very rapid disease progression, defined as CD4 decline to <350 cells/ μ l by two years post-infection.

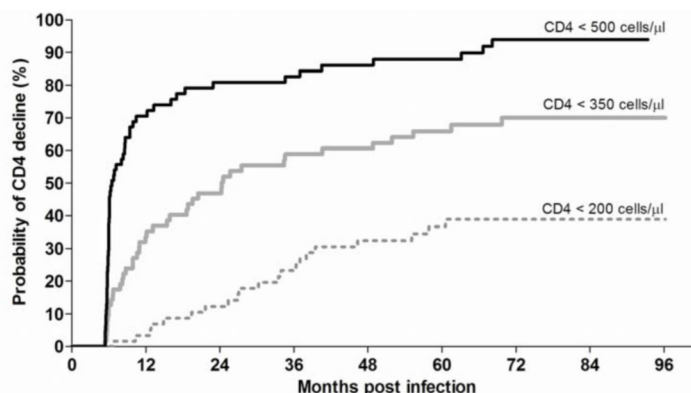
Although individuals infected with HIV subtype-B generally progress to AIDS within 8-10 years, 31% of the HIV subtype-C infected women in this cohort required antiretroviral therapy (ART) within 12 months of infection; this increases to 69% if the CD4+ T-cell count threshold for ART initiation is increased to 500 cells/ μ l.

This prospective sero-incidence cohort study identified 62 women at median 42 days post-infection (IQR 34- 59), who contributed 282 person-years of follow-up. Mean CD4 count dropped by 39.6% at 3 months and 46.7% at 6 months post-infection in women with pre-infection measurements. CD4 decline to <350 cells/ μ l occurred in 31%, 44%, and 55% at 1, 2, and 3 years post-infection, respectively, and to <500 cells/ μ l in 69%, 79% and 81% at equivalent time-points.

Predictors of rapid progression were CD4 count at 3 months post-infection [hazard ratio (HR) 2.07, 95% confidence interval 1.31-3.28, $p=0.002$], set-point viral load [HR 3.82 (1.51-9.67), $p=0.012$] and hepatitis B co-infection [HR 4.54 (1.31-15.69), $p=0.017$]. Conversely, presence of any of HLAB*1302, B*27, B*57, B*5801 or B*8101 alleles predicted non-rapid progression [HR 0.19 (0.05-0.74), $p=0.016$].

These results have significant implications

for programme implementation, resource allocation and HIV prevention and indicate that almost 70% HIV-infected individuals would need to start ART within one year of HIV in-



Superimposed Kaplan-Meier graphs of time to CD4 count <200 cells/ μ l, <350 cells/ μ l and <500 cells/ μ l since estimated date of infection

fection if the 2013 WHO treatment guidelines (CD4<500) were implemented.

For further reading see:

Mlisana K, Werner L, Garrett NJ, McKinnon LR, van Loggenberg F, Passmore J-AS, Gray CM, Morris L, Williamson C, Abdool Karim SS and the CAPRISA 002 Study Team. Rapid disease progression in HIV-1 subtype C infected South African women. *Clin Infect Dis* 2014; doi: 10.1093/cid/ciu573





AIDS 2014: "Stepping up the pace"

Delivering the opening plenary at the 20th International AIDS Conference in Melbourne, CAPRISA's Director, Professor Salim Abdool Karim, emphasized that 'Stepping up the pace', the theme of AIDS 2014, will require a new focus on key populations and geographical concentration of HIV, as well as intensified efforts to expand coverage of HIV testing and treatment.

Despite impressive progress in scaling-up condom use, counselling and testing, medical male circumcision, needle exchange and antiretroviral therapy coverage in low- and middle-income countries over the past decade, HIV remains a substantial global health threat with ongoing and increasing spread of HIV in key populations, such as men who have sex with men, people who inject drugs, sex workers and young women in Africa. In 2013, 1.5 million people died of HIV-related illness and 2.1 million people became infected with HIV – a rate of 6000 each day.

To achieve the aspirational goal of "the end of AIDS", a much greater focus is needed on a smaller number of countries. One third of all people living with HIV are in South Africa, Nigeria and India, and 80% of the global population of people living with HIV live in just 20 countries, predominantly in sub-Saharan Africa but also including larger middle-income countries such as China, Brazil, India, Indonesia, Russia and Thailand.

A more focused local-level response is needed to identify key populations district-by-district and appropriate interventions identified and implemented to reduce the HIV burden in these key populations.

Mathematical models show that epidemic control, which

is reduction of HIV-related mortality and morbidity to locally accepted levels, can be achieved by scaling up current effective technologies, while research to develop an AIDS vaccine or cure continues. Scale up of effective HIV prevention activities, however, needs

parallel with efforts to tackle the underlying social drivers of the epidemic in key populations, including stigma, legal barriers and social and gender norms.

Despite the many challenges faced daily to dealing with AIDS, with continued commitment and resources to scale up proven prevention technologies in more focused and smarter ways in key populations, the end of AIDS as a public health threat is within our grasp.

For more information see: Abdool Karim S *State of the art: epidemiology and access*. 20th International AIDS Conference, Melbourne, abstract MOPL0104, 2014. Download the presentation: <http://pag.aids2014.org/session.aspx?s=2013>



Dr Salim Abdool Karim delivering his plenary presentation at the AIDS 2014 conference

In memory of our AIDS community colleagues

The CAPRISA team was shocked and saddened to hear of the loss of 6 colleagues involved in the struggle against AIDS as they were flying on Malaysian Airlines flight MH17 from Amsterdam to Kuala Lumpur en route to the Melbourne International AIDS Conference.

In particular, we were deeply saddened to hear of the death of Dr Joep Lange and his partner, Jacqueline. Dr Lange, who was a world renowned researcher and former president of the International AIDS Society, was at the forefront of AIDS treatment research when we didn't even have treatment in South Africa. We at CAPRISA have had a long association with Dr Lange and have spoken on many platforms with him (the photo shows Dr Lange and Dr Quarraisha Abdool Karim speaking in a conference session in California). Dr Lange's passing and the deaths of our other AIDS colleagues leaves us deeply saddened at this loss to the AIDS community.

Our thoughts and prayers are with their families and friends.



Dr Joep Lange (left) with Dr Quarraisha Abdool Karim from CAPRISA



Giving 67 minutes for Mandela day

Inspired by Mandela Day, several of CAPRISA's staff members and fellows donated 67 minutes of their time on the 18 July "in service to one's fellow human". The team in Durban provided assistance by pledging funds, donating produce and preparing meals for the orphans at Carrington Primary School



In Vulindlela, CAPRISA staff donated cash and / or a food parcels. The food parcels and a warm meal was given to 25 children from the community (either from child-headed households or whose parents are unemployed) on the 18th July.

Mandela Day is an annual international day in honour of Nelson Mandela, celebrated each 18 July (on Mandela's birthday). The day was officially declared by the United Nations in Novem-

ber 2009 and is used to honour the legacy of Nelson Mandela, South Africa's former President, and his values, through volunteering and community service.



CAPRISA staff providing meals to the orphans at Carrington Heights Primary school

DST-NRF Research Career Advancement Fellowships

DST-NRF Research Career Advancement Fellowship Awardees Dr Dersh Archary and Dr Lenine Liebenberg attended the Fellowship's Launch at NH The Lord Charles Hotel, Somerset West on 25th July 2014. The Research Career Advancement Fellowships (RCAF) was initiated in 2013 when the Department of Science and Technology (DST) made funding available in order to



Dr Dersere Archary (left) and Dr Lenine Liebenberg (right) with Thandi Mgwebi (centre), Executive Director, Institutional Engagement & Partner Development at the NRF

strengthen research capacity and scientific research leadership in Science, Engineering and Technology; and Social Science and Humanities. A total of 210 applications were received and only 64 applicants were successful. The RCAF launch was an opportunity

for fellows to obtain advice on setting strategic goals and milestones for individual career development during the 5-year funded advancement period, and included sessions on funding and mentorship, networking, successful and compatible partnerships and strategic collaborations, and on developing an individual career development plan. The launch began with an inspiring lecture by Dr Thomas Auf der Heyde, Deputy Director-General of DST; and further lectures, panel discussions and networking sessions were continued in the same manner by several representatives from the University of Cape Town, the University of Stellenbosch, the University of Johannesburg, the Tshwane University of Technology, the University of KwaZulu-Natal, the University of the Witwatersrand, iThemba LABS, AIMS, Thomson Reuters, and the National Research Foundation. "We enjoyed the community support and were thoroughly inspired to forge our careers as independent scientists by conducting globally competitive yet locally responsive research," said the two awardees. "We're also incredibly grateful as recipients and are pleased that this important initiative will be sustained for future waves of early career investigators."

Trainee profiling: Kasavan Naidoo, Research Fellow

Kasavan Naidoo is a Research Fellow who has a keen interest in HIV and TB co-infection and in particular, TB recurrence and the interplay between host and bacterial factors.

Kasavan obtained his Masters in Medical Science (Medical Microbiology) in 2008 from the University of KwaZulu-Natal and is currently in his 5th year of his medical degree. Kasavan's interest in research was first sparked during his undergraduate degree in bio-medical sciences and he became particularly interested in understanding the pathogenesis of TB during his post-graduate studies.

Kasavan said that "CAPRISA is ideally suited to help me develop the skills needed to be a well-rounded and competent researcher". At CAPRISA Kasavan is involved to varying levels with writing manuscripts, grant applications, ethics applications and protocol developments. He said "CAPRISA has allowed me the opportunity to continue on a fellowship programme while I complete my medi-

cal degree. By doing so, CAPRISA is ensuring that I am able to reach my potential as a researcher while I try to earn my degree as a clinician. I am unaware of other organizations that are this committed to developing research capacity of medical students."

Kasavan has co-authored 7 manuscripts and is one of the few medical students who are publishing in high impact international journals. His immediate goals are to complete his medical degree and to start a PhD before the end of his internship as a medical doctor.

Kasavan's advice for others considering a Fellowship at CAPRISA is "If you are interested in research, this is without doubt, the place to be!"





Scientific papers published in 2014

45*	Naranbhai V , Kim S, Fletcher H, Cotton MF, Violari A, Mitchell C, Nachman S, McSherry G, McShane H, Hill AVS, Madhi SA. The association between the ratio of monocytes:lymphocytes at age 3 months and risk of tuberculosis (TB) in the first two years of life. <i>BMC Medicine</i> 2014; 12:120 doi:10.1186/s12916-014-0120-7
46	George G, Strauss M, Chirawu P, Rhodes B, Frohlich J, Montague C , Govender K. Barriers and facilitators to the uptake of voluntary medical male circumcision (VMMC) among adolescent boys in KwaZulu-Natal, South Africa. <i>African Journal of AIDS Research</i> 2014; 13:2, 179-187, DOI:10.2989/16085906.2014.943253
47	Mlisana K, Werner L, Garrett NJ, McKinnon LR, van Loggerenberg F, Passmore J-AS, Gray CM, Morris L, Williamson C, Abdool Karim SS and the CAPRISA 002 Study Team. Rapid disease progression in HIV-1 subtype C infected South African women. <i>Clinical Infectious Diseases</i> 2014; doi: 10.1093/cid/ciu573
48	Padayatchi N , Gopal M, Naidoo R, Werner L, Naidoo K , Master I, O'Donnell M. Clofazimine in the treatment of XDR-TB with HIV co-infection in South Africa: a retrospective cohort study. <i>Journal of Antimicrobial Chemotherapy</i> 2014; doi:10.1093/jac/dku235
49	Daftary A, Padayatchi N . Preferential adherence to antiretroviral therapy over tuberculosis (TB) treatment: a qualitative study of drug-resistant TB/HIV co-infected patients in South Africa. <i>Global Public Health</i> 2014; 18:1-10
50	Seaton KE, Ballweber L, Lan A, Donathan M, Hughes S, Vojtech L, Moody MA, Liao H-X, Haynes BF, Galloway CG, Richardson BA, Abdool Karim S , Dezzutti CS, McElrath JM, Tomaras GD, Hladik F. HIV-1-specific IgA detected in vaginal secretions of HIV uninfected women participating in a microbicide trial in Southern Africa are primarily directed toward gp120 and gp140 specificities. <i>PLOS ONE</i> 2014; 9(7): e101863. doi:10.1371/journal.pone.0101863
51	McKinnon, L.R. , Abdool Karim, Q . Honing in on enteric fever: The use of metabolomics could lead to improved diagnostics for enteric fever. <i>eLife</i> 2014; 2014 (3): e03545
52	Rametshe CL, Olivier AJ, Masson L, Barnabas S, McKinnon LR, Ngcapu S, Liebenberg LJ , Jaumdally SZ, Gray CM, Jaspan HB, Passmore J-AS . Role of semen in altering the balance between inflammation and tolerance in the female genital tract: Does it contribute to HIV risk? <i>Viral Immunology</i> 2014; 27(5): 200-206.

*continuation from previous newsletter

Scientific Reviews

Abstracts submitted for review		Manuscripts submitted for review		Ancillary studies submitted for review	
Total#	Cumulative [^]	Total#	Cumulative [^]	Total#	Cumulative [^]
0	325	1	188	0	52

for month, [^] since committee initiation

Conference & Workshop Reminders

Conference	Dates	Deadlines		Website
		Abstracts	Registration	
Southern African HIV Clinicians Society —Cape Town, Spout Africa	24-27 Sept 2014	Closed	1 May 2014	http://sahivsoc2014.co.za/ ;
Third Global Symposium on Health Systems Research — Cape Town, South Africa	30 Sept - 3 Oct 2014	Closed	2 June 2014	http://hsr2014.healthsystemsresearch.org
HIV Research for Prevention 2014: AIDS Vaccine, Microbicide, & ARV-based Prevention Science — Cape Town, South Africa	28-30 Oct 2014	Closed	15 Oct 2014	www.hivr4p.org
8th IAS Conference on HIV Pathogenesis, Treatment and Prevention (IAS 2015) - Vancouver, British Columbia, Canada	19-22 July 2015	27 Jan 2015	25 Feb 015	http://www.ias2015.org/
International Conference on HIV and AIDS - London, United Kingdom May 25 - 26, 2015	25-26 May 2015	25 Nov 2014	25 Jan 2015	https://www.waset.org/conference/2015/05/london/ICHA

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CAPRISA is an official research institute of the University of KwaZulu-Natal and Columbia University.

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