



CAPRISA

CENTRE FOR THE AIDS PROGRAMME OF RESEARCH IN SOUTH AFRICA

Newsletter

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Risk of nephrotoxicity in patients with drug resistant tuberculosis

In this Issue

In our feature story this month we feature the recent paper published in *JAIDS* on the risks of nephrotoxicity in treating drug resistant tuberculosis.

On page 2 we congratulate the inaugural recipient of the TWAS Abdool Karim African Women in Science Award, congratulate CAPRISA colleagues on being awarded the SAMRC Scientific Merit award (Silver) and report on the WHO adolescent guidelines launched online on 12 August.

Presentations at AIDS 2018 conference, the appointment of CAPRISA's research pharmacist's to the Antimicrobial Stewardship Committee in KZN and Prof Quarraisha Abdool Karim's appointment as the Pro Vice-Chancellor of African Health at UKZN is covered on page 3

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There is a significant risk of nephrotoxicity during treatment with a kanamycin/capreomycin-based drug-resistant TB (DR-TB) regimen, with or without concurrent treatment with antiretroviral therapy (ART). The findings of a recent study published in the *Journal of Acquired Immune Deficiency Syndromes*, provide evidence and lends further support to calls for the substitution of aminoglycosides during the intensive phase of DR-TB treatment, or the substitution of tenofovir disoproxil fumarate (TDF) in settings where the aminoglycoside use is unavoidable.

To estimate drug-induced nephrotoxicity (defined as an increase in serum creatinine greater than $26.5\mu\text{mol}$, or an increase in serum creatinine to 1.5 times the baseline value, or a decline in eGFR to less than $60\text{ml/min}/1.73\text{m}^2$) in DR-TB/HIV co-infected patients, 215 adult drug-resistant TB patients treated with a kanamycin/capreomycin-based (KM) regimen, with or without concomitant ART, were reviewed.

Using Kaplan-Meier plots (Figure), the association between reported drug use and nephrotoxicity was evaluated. The results of the 36-month study showed the incidence rate of nephrotoxicity was 3.6 (95% CI 1.4–7.3), 6.9 (95% CI 5.2–9.0), and 12 (95% CI 3.3–30.9) cases per 100 person-months of follow-up in the

KM only group (n=42), the KM+TDF group (n=163), and the KM+Other ART group (n=10) respectively. Using the KM only group as a reference, the hazard ratio was 2.06 (95% CI 0.92–4.63) in the KM+TDF group, and 4.09 (95% CI 1.17–14.25) in the KM+Other ART group. Based on these results, close monitoring of renal function is recommended during DR-TB treatment.

It is noteworthy that the principal investigator and first author of this study is a Consultant at Medical School who is doing his PhD as a CAPRISA Research Fellow. He started doing research at CAPRISA when he was a first year medical student.

For further reading see:

Perumal R, et al. Risk of Nephrotoxicity in Patients With Drug-Resistant Tuberculosis Treated With Kanamycin/Capreomycin With or Without Concomitant Use of Tenofovir-Containing Antiretroviral Therapy. *JAIDS* 2018; 78(5):536–542.

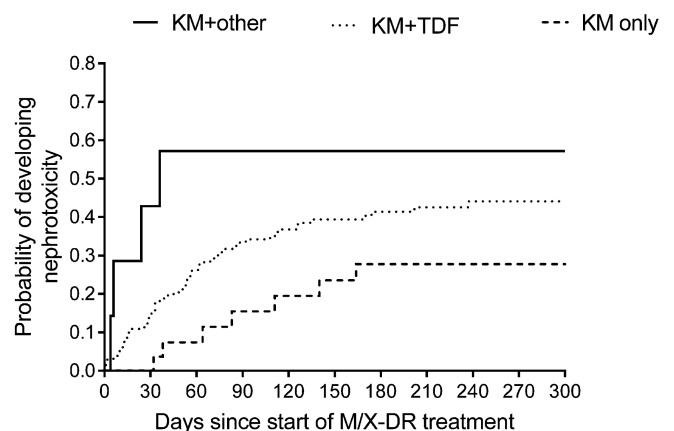


Figure: Kaplan-Meier curve for cumulative probability of developing nephrotoxicity.



Inaugural recipient of the TWAS-Abdool Karim African Women in Science Award visits CAPRISA

Clinical epidemiologist and HIV/TB researcher, Dr Barbara Burmen, who is the inaugural TWAS-Abdool Karim African Women in Science award recipient, visited CAPRISA from 27 – 31 August, to gain insights into CAPRISA’s HIV and TB treatment research and explore opportunities for collaboration.

“This is an award for a promising woman scientist from a low-income country in Africa to encourage and support more African women science leaders to emerge in low and middle-income countries,” said Prof Quarraisha Abdool Karim, CAPRISA’s Associate Scientific Director.

Burmen who is currently a senior research officer and principal inves-

tigator in HIV and TB implementation science at Kenya Medical Research Institute, delivered a public lecture at the Nelson R Mandela School of Medicine entitled: ‘Evaluating the value of prospective contact investigation of household members of patients with drug-susceptible tuberculosis in childhood TB control in Kisumu County Kenya’. Burmen said she was impressed by the “contextual state-of-the-art biomedical clinical and implementation science research in HIV and TB, undertaken by researchers at CAPRISA who are predominantly, women” She obtained her MBChB at Moi University in Kenya and her master’s in public health from the



University of Liverpool Online. She completed her PhD in public health at Maseno University in Kenya and will undertake her post doctoral studies at UCT next year.

CAPRISA researchers recognised at the 2018 SAMRC Scientific Merit awards

CAPRISA congratulates Dr Nesri Padayatchi Deputy Director of CAPRISA (left) and CAPRISA Research Associates, Professor Penny Moore (middle) and Professor Bavesh Kana (right) who individually received the 2018 South African Medical Research Council (SAMRC) Scientific Merit award (Silver). Nesri and Bavesh received the award for their outstanding contributions to health and medical research in tuberculosis and Penny Moore received the award for her outstanding scientific contributions on HIV antibodies. The awards were presented at a gala dinner hosted by the SAMRC on 30 August.



CAPRISA ethicist authors WHO guidelines

Professor Jerome Singh, head of Ethics at CAPRISA is the principal author of the WHO guidelines titled: ‘Guidance on ethical considerations in planning and reviewing research studies on sexual and reproductive health in adolescents’, launched online by the WHO on 12 August, International Youth Day.

The guidelines stemmed from a ‘pressing need for guidance on the ethical and safety issues to consider when conducting research with adolescents’ and is designed for researchers in sexual and reproductive health who do research with adolescents. The document covers five areas and includes case scenarios and

a chapter on reconciling conflicting ethical and legal obligations regarding adolescent research participants.

Dr Venkatraman Chandra-Mouli, from the WHO Department of Reproductive Health and Research, who led the development of the document said that Singh “brought to it solid academic legal and ethical expertise and practical experience in South Africa where he is based and in other contexts. The document can be accessed at: <http://www.who.int/reproductivehealth/publications/adolescence/ethical-considerations-srh-research-in-adolescents/en/> Singh said: “The guidance document is based on themes identified by a diverse group of global stakeholders,

and centred around typical scenarios that many investigators grapple with, globally.

The WHO document will provide useful guidance to, amongst others, researchers, research ethics committees, policymakers, and funders, and will supplement other existing global research ethics guidance documents, such as the CIOMS Guidelines and the Declaration of Helsinki.”





CAPRISA scientists present research on bNAbs vaccines at AIDS 2018

In addition to several posters, several of CAPRISA's scientists contributed to sessions at the 22nd International AIDS Society Conference, themed "Breaking Barriers, Building Bridges", held in Amsterdam, Netherlands from 23-27 July. CAPRISA's research on broadly neutralising antibodies and vaccine research featured prominently in presentations made by CAPRISA Research associates, Professors Penny Moore and Lynn Morris.

Moore delivered a talk entitled "Broadly neutralizing antibodies for HIV prevention and treatment" in a well-attended symposium entitled "Biomedical research innovations in the prevention, remission and cure of HIV/AIDS", which included Dr Tony Fauci (Director of the National Institute of Allergy and Infectious Diseases), Prof Glenda Gray (President of the South African Medical Research

Council) and Dr Peter Piot (Director London School of Hygiene and Tropical Medicine).

In a session entitled "Breaking down barriers: HIV intervention in sub-Saharan Africa", chaired by Professor Quarraisha Abdool Karim (Associate Scientific Director, CAPRISA) and Professor Catherine Hankins (Deputy Director Science, Amsterdam Institute for Global Health and Development), Morris gave a talk entitled "Building research excellence in HIV vaccine science" and summarized the importance of vaccine development from an African perspective. Morris also presented research carried out by NICD PhD student Simone Richardson, in a talk entitled "bNAbs for clinical use: antiviral activity and effector functions other than neutralization".



Professors Penny Moore (top) and Lynn Morris (bottom) deliver their presentations at the AIDS 2018 conference in Amsterdam.

CAPRISA Pharmacist appointed to KwaZulu-Natal Antimicrobial Stewardship Committee

Dr Sarentha Chetty, CAPRISA Research Pharmacist has been appointed to serve on the KwaZulu-Natal (KZN) Antimicrobial Stewardship Committee (AMSC). AMSC, which is an advisory committee to the head of health KZN, is responsible for developing, promoting, guiding, enhancing and evaluating antimicrobial stewardship activities in KZN in accordance with the National Antimicrobial Resistance (AMR) strategy (2015).



"AMR is fast becoming a serious global public health threat," explained Chetty and "according to the WHO, 'AMR threatens the effective prevention and treatment of an ever-increasing range of infections caused by bacteria, parasites, viruses and fungi'."

Quarraisha Abdool Karim appointed UKZN Pro Vice-Chancellor (African Health)

Professor Quarraisha Abdool Karim, associate Scientific Director of CAPRISA, has been appointed Pro Vice-Chancellor (African Health) at the University of KwaZulu-Natal. In this honorary position, Abdool Karim will provide guidance and support to advance high impact research and publications that will inform global health policies in the five leading causes of death in South Africa - TB, HIV, diabetes, hypertension, and lung diseases.



Photo: In her new role as the UKZN Pro Vice-Chancellor (African Health), Prof Abdool Karim presents the prestigious Emma Smith Overseas Scholarship to Master's in Genetics student, Ms Cebile Hlongwane at the University's annual Scholarship Awards function held on 22 August 2018.



Scientific papers published in 2018

- 55 **Stime KJ, Garrett N, Sookraj Y, Dorward J, Dlamini N, Olowolagba A, Sharma M, Barnabas RV, Drain PK.** Clinic flow for STI, HIV, and TB patients in an urban infectious disease clinic offering point-of-care testing services in Durban, South Africa. *BMC Health Services Research* 2018; 18(1):363. doi: 10.1186/s12913-018-3154-2.
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- 59 Haber N, Harling G, Cohen J, Mutevedzi T, **Tanser F**, Gareta D, Herbst K, Pillay D, Barnighausen T, Fink G. List randomization for eliciting HIV status and sexual behaviors in rural KwaZulu-Natal, South Africa: a randomized experiment using known true values for validation. *BMC Medical Research Methodology* 2018;18(1):46. doi: 10.1186/s12874-018-0507-9.
- 60 Hontelez JA, Bor J, **Tanser F**, Pillay D, Moshabela M, Barnighausen T. HIV Treatment Substantially Decreases Hospitalization Rates: Evidence From Rural South Africa. *Health Affairs* 2018; 37(6):997-1004.
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- 62 **Moore PL.** The Neutralizing Antibody Response to the HIV-1 Env Protein. *Current HIV Research* 2018; 16(1):21-28.
- 63 James S, Collins FH, Welkhoff PA, Emerson C, Godfray HCJ, Gottlieb M, Greenwood B, Lindsay SW, Mbogo CM, Okumu FO, Quemada H, Savadogo M, **Singh JA**, Tountas KH, Toure YT. Pathway to Deployment of Gene Drive Mosquitoes as a Potential Biocontrol Tool for Elimination of Malaria in Sub-Saharan Africa: Recommendations of a Scientific Working Group. *The American Journal of Tropical Medicine and Hygiene* 2018; 98(Suppl 6):1-49.
- 64 Montgomery ET, Stadler J, Naidoo S, Katz A, Laborde N, Garcia M, Reddy K, **Mansoor LE**, Etima J, Zimba C, Chitukuta M, Soto-Torres L. Reasons for nonadherence to the dapivirine vaginal ring: narrative explanations of objective drug-level results. *AIDS* 2018; 32(11):1517-1525.

*continuation from previous newsletter

