Newsletter
Hong Kong Society for HIV Medicine
香港愛滋病醫學會

MESSAGE FROM PRESIDENT

Issue 3 **May 2018**

Editor:
Dr Wai-Shing LEUNG

Please send comments to:
Dr. Wai-Shing LEUNG *(Editor),*

E-mail:
leungws4@ha.org.hk

PrEP – whose mandate?

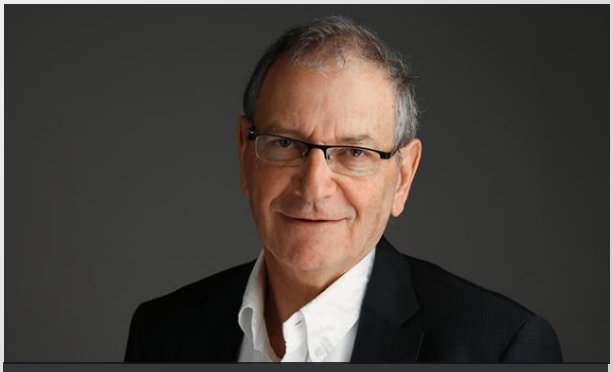
When the idea of pre-exposure prophylaxis (PrEP) first emerged over 10 years ago, most people were skeptical – about its effectiveness, feasibility and applicability even if proven to be effective. The situation reminds me of the day when HAART was, for the first time, shown to be effective in suppressing virus down to undetectable levels. It took a few years for the medical community to come to term with the need to prescribe it to HIV infected individuals. With the continued accumulation of scientific evidences confirming PrEP's validity, the questions have switched to "how" and "when" to make it available and accessible. Today, nobody doubts the effectiveness of PrEP, but the concern about access and adherence.

PrEP is now found in guidelines and recommended policies of national and international bodies. Around the world, however, PrEP is still largely implemented through pilot projects of different scales rather than as an integral component of any national HIV prevention programme. In Hong Kong, PrEP isn't yet formally available as a service, but patented TDF/FTC is likely being prescribed by doctors to the few affordable people, while generic compounds are accessed by needy persons through the Internet or in another country. So, like it or not, PrEP is here to stay. The outcome of the current scenario of PrEP access in Hong Kong is hard to predict. In the absence of good coverage nor agreed delivery framework, HIV prevention may not be achieved. Occurrence of undesirable phenomena like risk compensation and antiretroviral resistance are the new challenges. How shall PrEP be delivered and when should we begin to have it, as recommended by the many guidelines including that of WHO?

But first of all, whose responsibility is it to make PrEP happen? The oddity of PrEP rests with its existence as a pharmaceutical intervention for uninfected individuals. This is an unfamiliar situation for primary care doctors, our Centre for Health Protection (CHP) and the Hospital Authority. Unlike vaccine for the general population, PrEP works for marginalized communities … so a meaningful programme, if established, cannot ignore the challenge of identifying high risk individuals, for example those in the MSM community. This is very different from planning universal vaccination against hepatitis B or even human papillomavirus infection. Likewise, ID specialists are familiar with the antiretrovirals for their HIV patients, but unfamiliar with setting up programmes for the uninfected. Academics would be interested in conducting research but the universities may not want to deliver it as a service and ignoring the research angles, which will certainly lessen with time.

In today's world where specialization is key in medical practice, there are no longer good Samaritan doctors helping the sick irrespective of the health condition. In confronting any health issue, the doctor (no different from a layman) asks: whose responsibility is this? Central to this dilemma is the high cost of patented TDF/FTC. If each tablet costs a few cents, I am sure programmes would be developed in no time, by any party irrespective of the uncertainty of the discipline this should belong. But, whose responsibility is it to fight for an affordable PrEP programme? Well, perhaps it's food for thought for whoever considering him/herself 'practising' HIV medicine.

Prof SS Lee



In Memoriam :
Professor David Cooper
(1949 - 2018)

"It's unusual in a medical career to see the evolution of a disease from its beginnings – to a disease that emerged as a global health catastrophe – to this point now, where medical research is bringing it under control, ... I feel valued to be involved in this work and to have been able to make a difference for so many people."

Professor David Cooper

The Hong Kong Society for HIV Medicine mourns with incredible sadness the passing away of Professor David Cooper on 18th March 2018.

Professor Cooper initiated many groundbreaking researches in HIV and infectious diseases and was one of the first to respond to the worldwide AIDS epidemic in the early 1980s.

Professor Cooper diagnosed the first documented case of HIV in Australia in the mid-1980s, and in 1991 was named Chair of the WHO Global Programme on AIDS' Committee on Clinical Research and Drug Development. He was a past President of the International AIDS Society (1994 – 1998). In 1996, he worked with colleagues to found the HIV Netherlands Australia Thailand Research Collaboration, known as HIV-NAT, in Bangkok, Thailand.

Professor Cooper dedicated his life to the prevention, treatment and cure of HIV and other infectious diseases, and all over the world he was respected as a leader. Our Society offers the most respectful salute to this bold and compassionate leader. Professor Cooper is sorely missed by all of us.

Activities of the Society

"Journey of HIV Medicine" exhibition (November to December 2017)

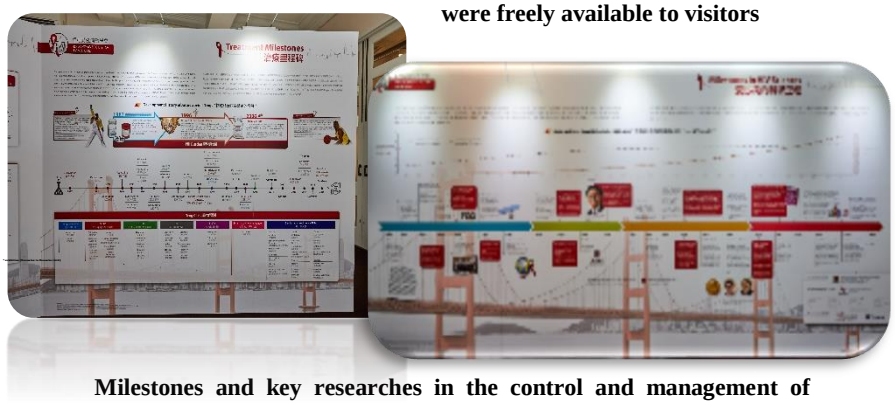
An exhibition on "Journey of HIV Medicine" organized by HKSHM was successfully held at the Hong Kong Medical Museum from 15th November to 14th December 2017. A soft opening was conducted on 18th November 2017. We are pleased to have Mr. Ng Ka Him, a famous local journalist, coming to the soft opening of the exhibition and sharing the exhibition information to his fans in his Facebook.

Three-dimensional model illustrated the action of different classes of antiretroviral drugs on the life cycle of HIV virus

The time capsule, borrowed from Red Ribbon Centre, revealed memorable items in the history of HIV control in Hong Kong

Specially-designed bookmarks illustrating the 4 important messages in HIV control – *safe sex, regular HIV testing, early treatment and zero discrimination* were freely available to visitors

Interviews of different stakeholders in the control of HIV in Hong Kong were displayed in the exhibition



Milestones and key researches in the control and management of HIV/AIDS was demonstrated

Photos taken at the soft opening of the exhibition

1st Annual Scientific Meeting cum Seminar on Chemsex (December 2017)

On 2nd December 2017, HKSHM organized the 1st Annual Scientific Meeting cum Seminar on Chemsex.

At the morning seminar on chemsex, Dr. Ricky Tung gave an overview of the local situation of chemsex among young people in Hong Kong and then Dr. Elda Chan talked about the substance abuse counselling service for HIV infected drug abuser. At the chemsex workshop, Mr. David Stuart from United Kingdom highlighted key issues and provided practical tips in counselling chemsex drug user. He also introduced his web-based ChemSex Care Plan which motivates patients to identify their achievable goal to control the chemsex drug use or even abstinence from the drugs. The seminar was well attended by participants working in the field of HIV control including representatives from non-government organizations (NGOs).

Dr. Ricky Tung

Dr. Elda Chan

The day before the Seminar on Chemsex, Mr. David Stuart visited the Red Ribbon Centre, the Yaumatei Social Hygiene Clinic and the Special Medical Service clinic of Queen Elizabeth Hospital

At the Annual Scientific Meeting (ASM) following the seminar, international and local experts including Prof. Somnuek Sungkanuparph from Thailand, Mr. David Stuart, Dr. Krystal Lee and Dr. Grace Lui provided updates on cryptococcal infection, chemsex and mental health, and obesity in people living with HIV. The lectures were very informative and well-received by the participants.

Dr. Krystal Lee

Prof. Sungkanuparph

Mr. David Stuart

Dr. Grace Lui

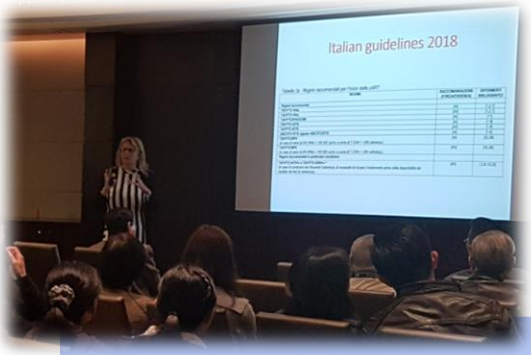
Speakers of 1st ASM, HKSHM and council members of HKSHM

Speakers and Council members of HKSHM sat together to make up the shape of HIV logo, with the meaning of working together to fight against HIV/AIDS

Other HIV symposiums

Symposium on "The Treatment of HIV Management – An Italian Perspective" (January 2018)

At the evening symposium on 22nd January 2018, organized by The Hong Kong Society for Infectious Diseases (HKSID), Prof. Cristina Mussini from the University of Modena and Reggio Emilia, Italy shared her insights into the use of antiretroviral therapy (ART), their tolerability, and drug-drug interactions in patients taking recreational drugs and ART.



Prof. Cristina Mussini discussed the Italian guideline on antiretroviral therapy

Symposium on "New Strategies for the Prevention of HIV Infection" (April 2018)

HKSHM co-organized the dinner symposium with the HKSID and Hong Kong College of Medical Nursing on 11th April 2018. At the symposium, Dr. F. Lisa Sterman from University of California, San Francisco illustrated the role that PrEP has played in HIV prevention, the successful implementation of PrEP in the city of San Francisco, and strategies for reaching out to all those who are at risk of becoming HIV-positive.

Dr. F. Lisa Sterman shared the successful experience of HIV control in San Francisco

Dr. M P Lee and Dr. Bonnie Wong presented souvenir to Dr. Sterman

Upcoming HIV conferences and meetings ...

- **Asia Pacific AIDS & Co-infections Conference (APACC) 2018,** 28-30 June 2018 | Hong Kong SAR, China
- **22nd International AIDS Conference (AIDS 2018),** 23-27 July 2018 | Amsterdam, Netherlands
- **HIV Drug Therapy Glasgow 2018,** 28-31 October 2018 | Glasgow, UK
- **2nd Annual Scientific Meeting, Hong Kong Society for HIV Medicine**, 8 December 2018 | Hong Kong SAR, China
- **Conference On Retroviruses And Opportunistic Infections (CROI) 2019,** 4-7 March 2019 | Seattle, USA

Acclaim

Novel universal anti-HIV-1 antibody invented by HKU shows promising results in humanized mice

The research team led by Prof. Chen Zhiwei from AIDS Institute and Department of Microbiology, Li Ka Shing Faculty of Medicine of the University of Hong Kong (HKU), worked together with researchers from Mainland China, recently invented a universal anti-HIV-1 antibody. The new findings are published in the April issue of Journal of Clinical Investigation. This single gene-encoded tandem broadly neutralizing antibody was titled "BiIA-SG". Apart from neutralizing the HIV virus, the BiIA-SG strategically ambushes invading HIV-1 particles to protect CD4 positive T cells by attaching to host protein CD4. The study demonstrated that the BiIA-SG not only displayed potent activity against all three panels of 124 genetically divergent global HIV-1 strains tested, but also prevented diverse live viral challenges completely in humanized mice. Moreover, gene transfer of BiIA-SG achieved prolonged drug availability in vivo, leading to a promising efficacy of eliminating HIV-1 infected cells in humanized mice. The study provides a proof-of-concept that BiIA-SG is a novel universal antibody drug for prevention and immunotherapy against HIV-1 infection. Hopefully, BiIA-SG will become the first "Made in Hong Kong" anti-HIV-1 antibody drug for clinical development.

Reference:

Xilin Wu, Jia Guo, Mengyue Niu, et al. Tandem bispecific neutralizing antibody eliminates HIV-1 infection in humanized mice. J Clin Invest. 2018 Apr 23. pii: 96764. doi: 10.1172/JCI96764. [Epub ahead of print]

The HKU research team invented a novel universal anti-HIV-1 antibody

HKUST researchers discover fitness landscape of HIV envelope protein that may help vaccine development

The international multi-disciplinary research team from the Hong Kong University of Science and Technology (HKUST), in collaboration with Massachusetts Institute of Technology, processed data from 1,918 HIV-infected patients globally to map the polyprotein gp160 on the HIV virus' surface that predict how HIV virus mutates and its ability to replicate. By using a computational framework, the scientists from HKUST for the first time identified a fitness landscape showing how HIV virus mutates, and its ability to assemble and replicate itself in the body. This five-year study was recently published in Proceedings of the National Academy of Sciences of the United States of America. The computer model could aid the rational design of immunogens for effective HIV vaccines. Knowledge of the fitness landscape can give scientists important clues as to which part of the HIV virus' spike proteins they should target, so as to corner the virus to mutate into forms that would severely compromise its fitness and its ability to reproduce and replicate.

Reference:

RHY Louie, KJ Kaczorowski, JP Barton, AK Chakraborty, MR McKay. Fitness landscape of the human immunodeficiency virus envelope protein that is targeted by antibodies. Proc Natl Acad Sci USA. 2018;115:E564–E573.

Academic corner

Highlights from CROI 2018

Wai-Shing Leung

The 25th Conference on Retroviruses and Opportunistic Infections (CROI) meeting, held from 4th to 7th March 2018 in Boston, brings together over 4,000 HIV/AIDS researchers, clinicians and experts from across the globe. Two studies presented in the meeting are summarized here.

HIV risk per sex act elevated in late pregnancy and postpartum

- 2,751 African HIV serodiscordant couples with HIV uninfected female partners were followed prospectively for at least 48 months in two HIV prevention studies. Pregnancy incidence was 12.50 per 100 woman-years (95% CI: 11.52-13.55) and 82 HIV transmission events occurred. The HIV transmission probability was 1.05 per 1,000 sex acts when women were not pregnant, 2.19 in early pregnancy, 2.97 in late pregnancy, and 4.18 in postpartum women. After adjustment for condom use, age, use of PrEP, and HIV viral load, the probability of HIV transmission per sex act was significantly higher in late pregnancy (adjusted RR 2.82, p=0.01) and postpartum (adjusted RR 3.97, p=0.01) compared to non-pregnant time. The increased risk of HIV transmission per sex act in late pregnancy and during postpartum suggests that biological changes such as changes in hormones and immune function during these periods play a role. However, while the exact biological mechanisms for the increased HIV susceptibility were not investigated in this study and further research is needed to better understand biological susceptibility, repeated testing in antenatal and postpartum care in high HIV prevalence settings may be warranted to prevent sexual transmission and identify acute maternal HIV infections.

One-month isoniazid and rifapentine for TB prophylaxis

- The BRIEF-TB/A5279 study randomised 3000 HIV-infected adults from 10 countries with either latent TB or at high risk of TB infection to either one month of daily isoniazid 300 mg plus rifapentine 450 – 600 mg or to the standard of care nine-month regimen with daily isoniazid 300 mg. Antiretroviral therapy with efavirenz or nevirapine was permitted. After three years of follow-up, there was no significant difference in the rate of primary events active TB, TB death, or death from an unknown cause: 34 vs 35 participants in the one vs nine month arms respectively. TB incidence rates were 0.69 vs 0.72/100 person years respectively (incidence rate difference= -0.025, upper 95% CI: 0.31). Although higher serious adverse events in the nine-month arm (7.1% vs 5.6%) were not statistically significant (p=0.1), targeted safety events was significantly lower with one month of treatment (3.3 vs 5.1/100 person years, p=0.03). The one-month course was more likely to be completed (97% vs. 90%, p<0.01). There was one case of rifampin-resistant TB in each arm and one case of isoniazid-resistant TB in the nine-month arm. The researchers concluded that once daily isoniazid plus rifapentine was non-inferior to nine-months isoniazid, with fewer side events, and higher completion rates. The one-month isoniazid and rifapentine may become a reasonable regimen for TB prophylaxis but more work needs to be done to replicate the findings.

香港愛滋病醫學會
HONG KONG SOCIETY FOR HIV MEDICINE

Membership registration form

Personal details

Prof/Dr/Mr/Mrs/Miss/Ms Surname: _____ First name: _____

Present appointment: _____

Institution: _____

Postal address: _____

_____

Email address: _____@_____Phone number: _____

Relevant HIV experience or work: _____

_____

Membership category

Ordinary member: HKD200 per year or HKD2000 life membership ☐

Eligibility: Medical practitioners who practices or are interested in HIV medicine.
Privilege: entitlement to vote, to hold office and to take part in all Society functions.

Associate member: HKD150 per year (no life membership) ☐

Eligibility: Healthcare professionals other than doctors including nurses, pharmacists, medical laboratory technologists, occupational therapists, physiotherapists, clinical psychologists, dietitians who are involved or are interested in HIV medicine.
Privilege: entitlement to take part in all Society functions.

Affiliate member: no fees required ☐

Eligibility: Non-healthcare professionals who are interested in HIV medicine
Privilege: receive news and updates from the Society, and participation in selected activities as decided by the council of the Society

Application proposed by HKSHM member: Name _____ Signature _____

Application seconded by HKSHM member: Name _____ Signature _____

Comments and suggestions

What do you expect from the Society (e.g. benefits, meetings, courses, education fund)?

Any other comments or suggestions for us to work on?

Date: _____

Please email the completed form to Dr Wilson Lam, Hon, Secretary, HKSHM at lwzz04@ha.org.hk

Data protection: *Personal data provided by you will be used by the Hong Kong Society for HIV Medicine (HKSHM) only for the purposes of handling your application and activities related to HKSHM. Personal data in the application form, or copies of which, will be disclosed or transferred to parties relevant and necessary for the purposes as stated above only.*