AUSTRALIA

Living well with HIV: managing co-existing health conditions

Volume 11 • Number 2

HIV Australia

ISSN 1446-0319 Volume 11, No. 2 (June 2013)

Editors Finn O'Keefe and Linda Forbes

Treatments Editor Dean Murphy

Design + Production Ascending Horse www.ascendinghorse.com

Correspondence

HIV Australia C/– AFAO, PO Box 51 Newtown NSW 2042 Australia Telephone +61 2 9557 9399 Facsimile +61 2 9557 9867 Email editor@afao.org.au Website www.afao.org.au

HIV Australia gratefully acknowledges the assistance of the Commonwealth Department of Health and Ageing

Print post approved PP225920/00016

AFAO is the national federation for the HIV community response, providing leadership, coordination and support to the Australian policy, advocacy and health promotion response to HIV/AIDS. Internationally, AFAO contributes to the development of effective policy and programmatic responses to HIV/AIDS at the global level, particularly in the Asia Pacific region.

AFAO's aims are to:

- Advocate on behalf of its members at the federal level, thereby providing the HIV community with a national voice;
- Stop the transmission of HIV by educating the community about HIV/AIDS, especially those whose behaviour may place them at high risk;
- Assist its members to provide material, emotional and social support to people living with HIV;
- Develop and formulate policy on HIV issues;
- Collect and disseminate information for its members;
- Represent its members at national and international forums; and
- Promote medical, scientific and social research into HIV and its effects.

AFAO Board

President Willie Rowe Vice President Bridget Haire Secretary Graham Brown Treasurer Andrew Burry Ordinary Member Rod Goodbun Staff Representative Finn O'Keefe AIVL Jenny Kelsall Anwernekenhe National Alliance Michael Costello NAPWA Craig Cooper Scarlet Alliance Audry Autonomy

In recognising the fundamental importance of information and education in working against the HIV/AIDS epidemic, all material in this publication may be reproduced for non-commercial use, personal research or educational purposes free of charge, provided the following citation is made: "Reprinted from Volume 11, No. 2 of *HIV Australia*, published by the Australian Federation of AIDS Organisations". Copyright of all images remains with the individual artists.

Requests for permission to reproduce any written material in this publication for commercial purposes should be made to AFAO directly.

AFAO is a member of Copyright Agency Limited (CAL). If you have been engaged by AFAO as a contributor to one of our publications in the past and are a member of CAL, we may be holding CAL funds in trust for you. If you think this may be the case, please contact AFAO directly (editor@afao.org.au).



This edition of *HIV Australia* examines health conditions that can sometimes occur alongside HIV. Articles discuss prevention and treatment, emerging research, and outline ways that HIVpositive people can minimise risk factors and proactively manage co-exisiting health conditions.

HIV Australia online includes additional content not published in the printed edition. Read more of *HIV Australia* at www.afao.org.au

We want to hear what you think about *HIV Australia*. Please send your feedback to the Editor, editor@afao.org.au or write to us at: *HIV Australia* C/- AFAO, PO Box 51, Newtown NSW 2042 Australia



Read *HIV Australia* online



30

33

36

39

41

44

45

47

Australian news International news Asia Pacific News It's never too early to take control BEN WILCOCK highlights a new interactive health resource for people with HIV	4 4 4 9	Cardiovascular disease, smoking and HIV: findings from the HealthMap qualitative study KARALYN MCDONALD and JULIAN ELLIOTT examine the link between smoking and heart disease for people with HIV, and discuss HIV-positive people's attitudes towards smoking
Bone health and HIV HILA HASKELBERG outlines a range of bone-related health conditions, discussing proactive steps HIV-positive people can take to maintain optimal bone health An elephant in the room? Anal cancer	8	Gay men and anal cancer MARY POYNTEN and ANDREW GRULICH explore the connection between the human papillomavirus (HPV) and anal cancer among gay men, highlighting findings from the SPANC study
and people with HIV JASON ONG explains that being alert to potential symptoms and having an annual check-up can minimise the risks of anal cancer		Neurocognition and HIV REBEKAH PULS provides an overview of research into the impact of various antiretroviral regimes on cognitive function for people with HIV
Ageing with HIV in Victoria: findings from a qualitative study KARALYN MCDONALD, JULIAN ELLIOTT and LISE SAUGERES report on key study findings exploring the	13	Chronic kidney disease in people with HIV: a review of recent developments in Australia DAVID GRACEY discusses why monitoring kidney health is important for HIV-positive people
impacts of ageing and chronic disease on people with HIV HIV, mental health and stigma: a brief survey of current research	17	Regional feature: Kapul Champions: a proud new voice in Papua New Guinea By MATTHEW TYNE
JASON APPLEBY summarises recent research examining the intersection of HIV and mental health Chronic illness and co-morbidities for African Australians living with HIV CHRIS LEMOH looks at health challenges experienced by African Australians	19	Book review: <i>HIV prevention and bisexual</i> <i>realities by Viviane Namaste, et al. (2012)</i> ABIGAIL GROVES investigates the erasure of bisexuals in HIV prevention and health promotion Treatment briefs
Action on hepatitis C: new drugs, new resources FINN O'KEEFE profiles developments in hepatitis C treatment and health promotion	22	Conferences
HIV and hepatitis C co-infection: can we avert another epidemic in Australia by acting fast? DAVID PIEPER says it's time to address the silence surrounding the sexual transmission of hepatitis C	24	
Testing for hepatitis C as a sexually transmissible	27	

infection: understanding health practitioners'

SOENKE TREMPER and GUY HUSSEY outline survey results that give insight into GPs' perspectives on

hepatitis C transmission among HIV-positive men who

knowledge and attitudes

have sex with men

HIV Australia welcomes submissions from interested authors. To submit an article or report for consideration, email editor@afao.org.au



AUSTRALIA

ACON launches community-based rapid HIV and STI testing centre

ACON, in partnership with Sydney Sexual Health Centre, has launched a[TEST], Australia's first communitybased rapid HIV and STI testing centre operated by and for gay men.

a[TEST] offers an express service; appointments take no more than 30 minutes, including the time it takes to deliver results. The centre uses two different rapid HIV tests: one collects oral fluids, the other involves a fingerprick. The rapid test result is considered preliminary - blood will also be collected on-site and sent for standard laboratory testing to confirm the rapid test result.

The provision of peer-based testing is an important aspect of the service. Recent research, conducted on behalf of the Australian Federation of AIDS Organisations (AFAO), found that peer-based community testing can help encourage gay men to test regularly by making them feel respected and that they won't be judged or berated for their behaviour.

Other Australian states have also announced rapid HIV testing trials in recent months. Queensland Association for Healthy Communities (QAHC) operates 'Testing Point', a weekly after-hours HIV/STI testing service for the LGBT community, which is staffed by volunteer doctors and nurses. The Queensland government has also commenced rolling out rapid testing at sexual health clinics since June. The Victorian government is expected to launch a community-based rapid HIV testing trial in late July.

Historic federal anti-discrimination legislation protects LGBTI Australians

Historic new anti-discrimination legislation offering specific protections to lesbian, gay, bisexual, transgender and intersex (LGBTI) people was passed by the Australian Government in June. The *Sex Discrimination (Sexual Orientation, Gender Identity and Intersex Status) Bill* 2013 is anticipated to come into effect from August 2013.

The legislation introduces three new grounds of discrimination: sexual orientation, gender identity and intersex status; and strengthens the protections against discrimination on the ground of marital or relationships status. The new legislation makes Australia the first country in the world to specifically legislate for the rights of intersex people.

President of OII Australia, Gina Wilson, commented: 'The legislation comes after a strenuous and exhausting process of educating and lobbying. We acknowledge with great thanks all of those who helped, particularly our LGBT allies, who went to the trouble of understanding and including intersex in their own efforts to bring about this historic legislative change.'

Once the Bill comes into effect, religious aged care providers can no longer discriminate on the basis of a person's sexual orientation, gender identity and/or intersex status; however there are other discrimination exemptions for religious organisations still in place. LGBTI advocacy groups around the country welcomed the Bill while also stating that they will continue to advocate against the remaining exemptions for religious organisations.

INTERNATIONAL

New WHO guidelines recommend earlier HIV treatment

The World Health Organization (WHO) has announced ambitious new HIV treatment guidelines which will see the number of people eligible for HIV treatment rising substantially.

The new guidelines, announced in June, recommend earlier commencement of antiretroviral therapy (ART) for people with HIV, increasing the treatment initiation threshold from a CD4 count of less than 350 to less than 500. As well as recommendations for earlier commencement of treatment for people with HIV, the guidelines outline improved protocols to prevent HIV from being transmitted from mother to child, and regular and more effective monitoring of people's viral load to ensure treatment is working. The use of 'viral load monitoring' to ensure antiretroviral medicines are keeping the virus suppressed is a critical advance in the new recommendations.

Humanitarian organisations including AIDS Healthcare Foundation (AHF) and Médecins Sans Frontières welcomed the new guidelines, describing them as an immense benefit to HIV-positive people, particularly for those living in developing countries.

Penninah lutung Amore, AHF's Africa Bureau Chief described the announcement as 'a victory for people living with HIV around the globe – including Africa'.

'WHO's decision to raise the treatment initiation guidelines removes a major roadblock to lifesaving treatment, as country AIDS programs often look to WHO recommendations when setting policy guidelines,' Penninah Iutung said. 'This is a very significant step toward universal access to lifesaving antiretroviral treatment and, treatmentas-prevention.'

Dr Unni Karunakara, International President of Médecins Sans Frontières, called for international political and financial support to ensure rapid roll-out of the new guidelines.

MSF are urging donor agencies such as the Global Fund to Fight AIDS, TB, and Malaria and the US Government's PEPFAR program to support the implementation of the new guidelines as a strategic priority. The Global Fund is holding its three-year replenishment conference later this year, where donor commitments should reflect the increased treatment targets.

Key community groups underrepresented at AIDS 2012

Abstracts specifically dedicated to key at-risk populations were underrepresented at the 2012 International AIDS Conference (AIDS 2012), an independent evaluation has found. The Global Forum on MSM and HIV (MSMGF), in collaboration with a range of organisations representing the interests of men who have sex with men, people who use drugs, sex workers and transgender people, conducted a qualitative audit of abstracts accepted for AIDS 2012. The audit was designed to examine whether conference organisers had made any improvements to program coverage of key affected communities since the AIDS 2010 conference. The audit found little improvement in program coverage of key affected communities in 2012.

In both 2010 and 2012, only 17% of abstracts accepted for the conference were exclusively focused on men who have sex with men, transgender people, people who inject drugs (PWID), or sex workers. The percentage of all abstract sessions at AIDS 2012 exclusively focused on each key population was limited to 3% for MSM, less than 1% for transgender people, 5% for PWID, and 5% for sex workers.

The audit also found that numerous regions and countries with concentrated HIV epidemics among communities of men who have sex with men (MSM) were underrepresented, including Eastern Europe and Central Asia (EECA) and the Caribbean. All abstracts from Oceania focused on Australia, with no MSM-exclusive abstracts from the Pacific Islands included in the conference program.

MSMGF has circulated an online petition highlighting the issue, encouraging affected communities to submit abstracts in the lead-up to AIDS 2014. The full audit report is available at: http://www.msmgf. org/files/msmgf/Advocacy/AIDS2012_ KeyPopulations.pdf

The conference organisers, the International AIDS Society (IAS), issued a statement welcoming the audit. They responded to the criticisms saying that abstract driven sessions account for less than half of the total program; representation of key communities increase when considering the conference program as a whole. The IAS say they look forward to 'continued dialogue and collaboration' on the issues in the lead-up to AIDS 2014.

Experts debate the post-2015 HIV agenda

The Joint United Nations Programme on HIV/AIDS (UNAIDS) together with medical journal *The Lancet* have established a commission of political and health leaders to discuss future responses to HIV/AIDS and other global health issues after the Millennium Development Goals expire in 2015.

The UNAIDS and Lancet Commission: From AIDS to Sustainable Health, met for the first time in Malawi on 28–29 June to discuss how the AIDS response can be used to shape the future of global health.

The Committee consists of more than 30 Commissioners, including heads of state, policy-makers, people living with HIV, development experts, scientists, young people, AIDS advocates and private sector leaders.

'This is the first time that such a diverse group of experts has been brought together for frank discussions about the future of global health,' said Michel Sidibé, Executive Director of UNAIDS, in the lead up to the meeting.

A report detailing outcomes of the meeting, as well as a series of interim reports, will be published by *The Lancet*.

Advancing HIV Justice: a progress report

A new report published by the HIV Justice Network outlines the global achievements in challenging the inappropriate use of criminal laws and prosecutions for HIV non-disclosure, potential or perceived exposure and transmission.

Advancing HIV Justice: A progress report of achievements and challenges in global advocacy against HIV criminalisation, written by Edwin J. Bernard and Sally Cameron on behalf of the Global Network of People Living with HIV (GNP+) and the HIV Justice Network, was released in June.

The report demonstrates the success of advocacy efforts in limiting the unfair application of laws that target people living with HIV.

The full report can be downloaded at http://www.hivjustice.net/advancing/

HIV-positive people on ART have the same mortality risk to HIV-negative people

HIV-positive people responding well to antiretroviral therapy (ART) have no greater mortality risk than their HIV-negative peers, *aidsmap* reports, citing research published in *AIDS* online.¹

The research looked at the mortality rates of 3,280 people enrolled in two large randomised controlled trials – the SMART study and the ESPRIT trial. Study investigators concluded that for individuals on ART with an undetectable viral load and a CD4 cell count above 500 cells/mm³, there was no higher risk of mortality then for HIVnegative people.

'We identified no evidence for a raised risk of death compared with the general population in HIV-infected individuals on ART with an undetectable viral load, who maintained or had recovery of CD4+ T-counts to at least 500 cells/ mm³, 'report the study investigators

The researchers stated that elevated mortality rates found among people with lower CD4+ T-cell counts could have been reduced though timely HIVdiagnosis and early initiation of ART. However, they also said the increased risk of death among people with low CD4 cell counts (below 200 cells/ mm³) was only 'modest' following ART commencement if the treatment was successful in raising the patient's CD4 T-cell count above 500 cells/mm³.

The study authors cautioned against using their findings as evidence about the optimal time to commence ART, saying that further research is needed.

Reference

Rodger, A., et al. (2013). Mortality in well controlled HIV in the continuous antiretroviral therapy arms of the SMART and ESPRIT trials compared with the general population. *AIDS*, *27*(6): 973–979. DOI: 10.1097/QAD.0b013e32835cae9c

Ethical concerns about PrEP trial among people who inject drugs

Findings from the Bangkok Tenofovir Study have indicated that a daily dose of pre-exposure prophylaxis (PrEP) can almost halve the risk of HIV

continued from previous page

acquisition among people who inject drugs. The trial - launched in 2005 by the Thai Ministry of Public Health and the US Centers for Disease Control (CDC) – involved total of 2,411 HIV-negative men and women who inject drugs who were randomly assigned to take a daily dose of tenofovir disoproxil fumarate (TDF) or placebo.

Among the 1,204 participants taking TDF, there were 17 HIV infections, compared with 33 infections among the 1,207 participants taking placebo. These results amount to a statistically significant 49% reduction in risk of HIV acquisition overall.¹

Following publication of the trial results, several Thai community groups of people who inject drugs issued a joint media statement raising concerns about the way the trial was conducted, which they say renders the 'real world' results of PrEP use by people who inject drugs as uncertain.

The community groups described a lack of community engagement, both during the planning process and throughout the trial, and a 'disheartening unwillingness' of researchers to respond to their concerns. Notably, they reported that their requests to provide participants with access to clean needles were ignored. Therefore, they say that the results shed no light on the role of PrEP in the context of the most effective HIV prevention intervention for people who inject drugs.

Other issues raised by the community groups included the potential coercion of trial participants, due to clinic staff providing methadone at the same time as recruiting for the trial, financial reimbursement given to participants and a high proportion of doses (>85%) administered under direct observation.

Paisan Suwannawong, Executive Director of Thai AIDS Treatment Action Group (TTAG) and cofounder of Thai Drug User's Network (TDN), said: 'While TTAG is glad for any evidence of reduced HIV transmission among people who inject drugs, this trial failed to promote basic ethical practices and patently ignored community concerns. In our opinion, the trial serves as a "worst practice" example of community engagement, failing to ensure participant access to a comprehensive prevention package in a placebo trial, and ignoring other issues we tried to raise to researchers at the outset.'

The joint statement concluded that biomedical prevention trials need to heed the lessons of the Bangkok Tenofovir Study and ensure extensive community consultation and full respect for the rights of research participants.

Reference

 Choopanya, K., et al. (2013). Antiretroviral prophylaxis for HIV infection in injecting drug users in Bangkok, Thailand (the Bangkok Tenofovir Study): a randomised, double-blind, placebo-controlled phase 3 trial. *The Lancet, 381*(9883). DOI:10.1016/ S0140-6736(13)61127-7

ASIA PACIFIC

Judges discuss HIV, human rights and the law in Asia and the Pacific

In June, senior judges from 16 countries in Asia and the Pacific met in Bangkok for a two-day dialogue discussing the impact of laws on the rights of people with HIV.

The meeting, organised by the International Commission of Jurists, The United Nations Development Program (UNPD) and the Joint United Nations Programme on HIV/AIDS (UNAIDS) was the first-ever meeting of judicial officials discussing HIV, human rights and the law in Asia and the Pacific. HIV-positive people from across the regions and members of regional judicial training institutions also participated in the discussions.

Delegates at the forum discussed jurisdictional examples where human rights principals had been applied to legal decisions, thereby strengthening legal environments and helping to remove stigma experienced people with HIV.

In the keynote address at the forum, Jan Beagle, Deputy Executive Director of UNAIDS, described the critical role that the judiciary plays in responses to HIV: 'Members of the judiciary are often the last resort for those who face violations of the law and their human rights' Ms Beagle said.⁴ ... transformative decisions have been handed down by judges in Australia, India, Nepal and Thailand, to name a few.²

During the conference, UNAIDS launched the first-ever judicial handbook on HIV, human rights and the law. The resource, *Compendium of Judgments: Judicial Dialogue on HIV, Human Rights and the Law in Asia and the Pacific*, is available for download at www.undp.org

Snapshot of legal protections for people with HIV in Asia and the Pacific

The United Nations Development Program (UNDP) has released a report documenting laws in Asia and the Pacific that provide legal protections against HIV-related human rights violations, along with the lessons learned from their implementation and enforcement.

The report, Legal protections against HIV-related human rights violations: Experiences and lessons learned from national HIV laws in Asia and the Pacific, is a direct follow-up to the Global Commission on HIV and the Law report Risks, Rights and Health (July 2012) and the Asia-Pacific Regional Dialogue of the Global Commission on HIV and the Law, convened in Bangkok in February 2011.

Key recommendations in the report relate to national frameworks, law reform, improved access to justice and legal empowerment, and support for capacity development. The report states that any law reform should be informed by systematic legislative reviews that assess laws against the International Guidelines on HIV/AIDS and Human Rights.

The report also recommends that governments should provide training for police and public security personnel on HIV and human rights to address police abuses and to ensure that police act to protect and promote the rights of people with HIV and key populations.

EXAMPLE 200 BIOLOGICAL SOLUTION FOR HIV AND HEALTHY LIVING

It's never too early to take control By Ben Wilcock

Because people with HIV are now living longer, the management of other health conditions – including conditions affecting cardiovascular, liver, kidney and bone health – has become an increasing priority.

Although these are common conditions for many people, there are special considerations for people with HIV. By being aware of these potential challenges, and proactive ways of addressing them, people with HIV can maximise their health and wellbeing.

Articles in this edition of *HIV Australia* look at a range of these health issues, and discuss ways that people with HIV can proactively manage these conditions.

The Australian Federation of AIDS Organisations (AFAO) has recently launched 'Your Body Blueprint: For HIV and Healthy Living', a new nationwide campaign for people living with HIV. It aims to encourage and support HIV-positive people to lead healthier lives, reduce the risk of illness, and enhance quality of life. The campaign's central message is that it's never too early to take control of your health; the campaign aims to assist people with HIV to identify simple strategies for reducing the risk of developing some of these other conditions.

AFAO President, Willie Rowe explains: 'By addressing these other health issues, people with HIV can help prevent these conditions and make significant improvements to their health and wellbeing.'

The 'Your Body Blueprint' campaign is based around a new interactive website (www.yourbodyblueprint.org.au). The website allows people to navigate parts and systems of the body to learn more about the health issues relating to each specific area, and to find tips for reducing the risk of these conditions. The website also provides a range of other important information and suggestions for healthy living with HIV, as well as links to other key sources of information.

'Ensuring people living with HIV are aware of these issues is vitally

important. This campaign provides this information in a way for people to easily find the information they want, and gives practical ideas for improving their health,' said Robert Mitchell, President of the National Association of People with HIV Australia (NAPWHA).

The campaign will soon be rolled out across the country, and will be featured in a range of promotions including online and outdoor advertisements. A variety of materials will be distributed for the campaign's launch, including posters, cards and post-it note pads for clinicians. This is the first phase of an ongoing campaign. A further two phases are already in development for the continuation of 'Your Body Blueprint'.

Copies of the campaign materials are available from AFAO and also from state-based AIDS councils and other organisations for people living with HIV.

Ben Wilcock is an AFAO HIV Education and Health Promotion Officer in the AFAO/ NAPWHA Education Team.



Got something to say?

Your views are important to the success of this publication.

HIV Australia publishes letters and contributions from readers. If you want to respond to something you have read here, or have an idea for an article, please write to us at: editor@afao.org.au



Bone health and HIV By **Hila Haskelberg**

Since the introduction of highly active antiretroviral therapy in 1996, the quality of life and survival of HIV-positive people has improved dramatically. In developed countries, HIV infection has evolved into a chronic disease. Yet, as the age of people living with HIV increases, new challenges are emerging including the occurrence of several non-AIDS conditions associated with ageing. These include bone loss, or low bone mineral density (BMD)1 and higher rates of fractures² seen in people living with HIV when compared with those without HIV. Different factors may play a role in the relationship between bone, HIV and antiretroviral therapy. By being aware of these issues and taking a range of proactive steps, people with HIV can help to maintain optimal bone health.

Bone tissue

Bone is a metabolically active tissue that constantly renews itself throughout life, in a process called remodelling (reconstruction). The

tissue is mainly made of collagen and minerals. Collagen is a protein that gives the bone its flexible structure, and minerals, such as calcium and phosphorus, add strength. Different hormones participate in the regulation of remodelling, such as calcitonin, parathyroid hormone, oestrogen, and testosterone. In addition, vitamin D is important for maintenance of calcium and phosphate levels in the blood. During remodelling, old bone is removed (bone resorption) and new bone is placed (bone formation). Until the third decade of life, there is a higher rate of bone formation than bone resorption. After the peak bone mass has been reached, BMD usually declines over time as the balance between bone formation and bone resorption changes.

Bone formation and resorption remain synchronised throughout life; this balance is affected by a variety of genetic, environmental and pathological factors. Some of the factors that have been associated with bone loss are age and sex, ethnicity, physical activity and immobility, smoking, alcohol consumption, anti-osteoporotic drugs, corticosteroids and antiretroviral drugs.³ Deficiency in vitamin D, as well as decreased calcium intake and impaired intestinal absorption of calcium, can also result in weakening of the bones.⁴

Osteoporosis and HIV

Skeletal status is most commonly assessed by measuring BMD using dual energy X-ray absorptiometry (DXA). This is a painless and relatively quick test that uses a type of X-ray to assess the level of minerals in the bones. The World Health Organization (WHO) separates reduced BMD into two categories: osteoporosis, defined as a BMD at least 2.5 standard deviations below normal peak values for sexmatched young adults (i.e., a T-score less than -2.5) and osteopenia, defined as a T-score between -1 and -2.5.5 People with osteopenia are at greater risk of possibly developing osteoporosis over time and therefore should have a DXA scan done every two to five years to monitor their bones status.



Figure 1: Possible risk factors for low BMD and fractures in HIV-positive adults

There has been extensive research into bone diseases in people without HIV, mainly in postmenopausal women as the hormonal changes during menopause lead to bone loss. In HIV-positive individuals, a range of skeletal disorders has been described including osteopenia, osteoporosis^{6,7,8}, osteomalacia (softening of the bones), and osteonecrosis (death of bone tissue due to reduced blood supply). Osteoporosis is the most common bone disease in Australia⁹. It results from excessive bone loss leading to weakening of the bones. In many cases, osteoporosis remains undiagnosed until a fracture occurs, most commonly at the spine, hip or forearm. In population studies comparing the incidence of fracture rates among people with and without HIV, fractures rates have been found to be significantly higher among HIV-positive people.^{10,11}

Bone mineral density, HIV and antiretrovirals

The mechanisms underlying the possible relationship between BMD, fractures and HIV are not fully understood and may involve effects of both HIV and antiretroviral therapy, in addition to traditional risk factors (see Figure 1). Some of the traditional

risk factors tend to be more common in HIV-positive people and include smaller body size, low vitamin D levels, smoking, alcohol use and co-infection with hepatitis C. The chronic inflammation associated with untreated HIV infection can also affect the balance between bone resorption and formation and lead to bone loss.¹² The role of antiretroviral therapy in bone loss is yet to be determined. Different studies show that initiation of antiretroviral therapy is associated with a short-term decrease in BMD in the first year of 2 to 6%, after which time the BMD tends to stabilise.^{13,14} Looking at specific antiretroviral drugs, therapy with tenofovir^{15,16,17} and some protease-inhibitor-based regimens18 have been associated with bone loss, though the mechanism involved is unknown.

Clinical management

BMD measurement is used to determine whether to start osteoporosis treatment and to monitor the treatment efficacy.¹⁹ Recently published guidelines by McComsey et al., for the management of bone disease in HIVpositive adults recommend performing a DXA scan for patients with fragility fractures, for all HIV-positive postmenopausal women and for HIVpositive men aged 50 years or older.20 The guidelines also highlight the importance of identifying secondary causes of osteoporosis, for example hypogonadism, vitamin D deficiency, or liver disease. A 10-year fracture risk can be estimated using the WHO Fracture Risk Assessment Tool (FRAX) (www. shef.ac.uk/FRAX), which has been validated for adults aged over 40 years. McComsey et al., recommend that if the risk of all osteoporotic fracture is >20% or the risk of hip fracture is >3%, then the initiation of anti-osteoporotic medications should be considered.²¹

There are different types of drugs that are used to treat osteoporosis: bisphosphonates (which lower the rate of bone resorption), hormone therapy, and drugs that stimulate bone formation. There are a few studies that have investigated the short term effects of these drugs on BMD in HIVpositive people²²; the effects found were similar to the people without HIV.

There are some preventative steps that can be taken for good bone health. These include balanced nutrition consisting of adequate sources of calcium, vitamin D, and phosphorus. Vitamin D is also produced in the body during an exposure to sunlight. If there is a concern that the levels of calcium or vitamin D are still low, the person should discuss with their treating physician if supplements are required. Weight-bearing activities and resistance exercises can help strengthen the skeleton as well.

Other preventative measures for good bone health are suggested under the 'bone health' section of the AFAO website: www.yourbodyblueprint.org.au

References

- 1 Brown, T., Qaqish, R. (2006). Antiretroviral therapy and the prevalence of osteopenia and osteoporosis: a meta-analytic review. *AIDS*, *20*(17), 2165–2174.
- 2 Triant, V., Brown T., Lee, H., Grinspoon, S. (2008). Fracture prevalence among human immunodeficiency virus (HIV)-infected versus non-HIV-infected patients in a large U.S. healthcare system. J Clin Endocrinol Metab, 93(9), 3499–3504.
- Haskelberg, H., Carr, A., Emery, S. (2011). Bone Turnover Markers in HIV Disease. *AIDS Reviews*, *13*(4), 240–250.
- 4 Holick, M. (2007). Vitamin D deficiency. *N Engl J Med, 357*(8), 266–281.
- 5 Kanis, J., Melton, L., Christiansen, C., Johnston, C., Khaltaev, N. (1994). The diagnosis of osteoporosis. *Journal of Bone* and Mineral Research, 9(8), 1137–1141.
- 6 Brown, T., et al., (2006), op. cit.
- 7 Yin, M., Zhang, C., McMahon, D., Ferris, D., Irani, D., Colon, I., et al. (2012). Higher

rates of bone loss in postmenopausal HIV-infected women: a longitudinal study. *Journal of Clinical Endocrinology and Metabolism, 97*(2), 554–562.

- 8 Carr, A., Miller, J., Eisman, J., Cooper, D. (2001). Osteopenia in HIV-infected men: association with asymptomatic lactic acidemia and lower weight preantiretroviral therapy. *AIDS*, *15*(6), 703.
- 9 Henry, M., Pasco, J, Nicholson, G, Kotowicz, M. (2011). Prevalence of osteoporosis in Australian men and women: Geelong Osteoporosis Study. *Medical journal of Australia, 195*(6), 321–322.
- 10 Triant, V., et al., (2008), op. cit.
- 11 Güerri-Fernandez, R., Vestergaard, P., Carbonell, C., Knobel, H., Avilés, F., Soria Castro, A., et al. (2013). HIV infection is strongly associated with hip fracture risk, independently of age, gender and co-morbidities: A population-based cohort study. *Journal of Bone and Mineral Research*.
- Ofotokun, I., McIntosh, E., Weitzmann, M. (2012). HIV: inflammation and bone. *Current HIV/AIDS Reports*, 9(1), 16–25.
- 13 Gallant, J., Staszewski, S., Pozniak, A., DeJesus, E., Suleiman, J., Miller, M., et al. (2004). Efficacy and safety of tenofovir DF vs stavudine in combination therapy in antiretroviral-naive patients: a 3-year randomized trial. JAMA, 292(2), 191.
- 14 Martin, A., Bloch, M., Amin, J., Baker, D., Cooper, D., Emery, S., et al. (2009). Simplification of antiretroviral therapy with tenofovir-emtricitabine or abacavir-Lamivudine: a randomized, 96-week trial. *Clinical Infectious Diseases, 49*(10), 1591.
- 15 Gallant, J., et al., (2004), op. cit.
 16 Bedimo, R., Maalouf, N., Zhang, S., Drechsler, H., Tebas, P. (2012).
 Osteoporotic fracture risk associated with cumulative exposure to tenofovir and other antiretroviral agents. *AIDS*, *26*(7), 825.

- 17 McComsey, G., Kitch, D., Daar, E., Tierney, C., Jahed, N., Tebas, P., et al. (2011). Bone mineral density and fractures in antiretroviral-naive persons randomized to receive abacavir-lamivudine or tenofovir disoproxil fumarate-emtricitabine along with efavirenz or atazanavir-ritonavir: AIDS clinical trials group A5224s, a substudy of ACTG A5202. *J Infect Dis, 203*(12), 1791–1801.
- 18 Duvivier, C., Kolta, S., Assoumou, L., Ghosn, J., Rozenberg, S., Murphy, R., et al. (2009). Greater decrease in bone mineral density with protease inhibitor regimens compared with nonnucleoside reverse transcriptase inhibitor regimens in HIV-1 infected naive patients. *AIDS*, 23(7), 817–824.
- 19 International Society for Clinical Densitometry. (2007). Official Positions. Retrieved from: http://www.iscd. org/wp-content/uploads/2012/10/ ISCD2007OfficialPositions-Combined-AdultandPediatric.pdf
- 20 McComsey, G., Tebas, P., Shane, E., Yin, M., Overton, E., Huang, J., et al.(2010). Bone Disease in HIV Infection: A Practical Review and Recommendations for HIV Care Providers. *Clinical Infectious Diseases*, *51*(8), 937–946.
- 21 ibid.
- 22 Mondy, K., Powderly, W., Claxton, S., Yarasheski, K., Royal, M., Stoneman, J., et al. (2005). Alendronate, vitamin D, and calcium for the treatment of osteopenia/ osteoporosis associated with HIV infection. *Journal of Acquired Immune Deficiency Syndromes, 38*(4), 426–431.

Hila Haskelberg is a PhD candidate and Clinical Project Coordinator at the Kirby Institute, The University of NSW.

halc

414 Elizabeth Street Surry Hills 2010 PO Box 350 Darlinghurst NSW 1300 Tel: (02) 9206 2060 Fax: (02) 9206 2053 Freecall: 1800 063 060 email: halc@halc.org.au www.halc.org.au The HIV/AIDS Legal Centre (HALC) is a specialist community legal centre providing free legal services to people with HIV related legal problems.

All staff and volunteers at HALC understand the legal problems faced by people affected by HIV.

HALC conducts community legal education sessions with service providers and potential clients on topics such as discrimination, disclosure, privacy, wills and immigration, as well as conducting advocacy for law reform on systemic issues relating to HIV.

Resources in plain English produced by HIV/AIDS Legal Centre on legal information related to HIV are available online at www.halc.org.au



An elephant in the room? Anal cancer and people with HIV By Jason Ong

The face of HIV is changing in Australia. There has been a definite shift within the last two decades, from the fear of developing AIDS to the optimism of living a full life with HIV. But despite the many advances in HIV management and the marked improvement in the quality of life of someone with well-controlled HIV, there is an elephant in the room that needs urgent attention. The elephant represents a word that no one likes to think or talk about. Yes, it is the 'C' word – CANCER.

Every country with good records of cancer of those living with HIV has observed that despite marked improvements in how we manage HIV, the rates of anal cancer are not declining as they have for other cancers. Anal cancer is now the most common non-AIDS defining cancer in someone living with HIV in Australia.

What is anal cancer?

Anal cancer is a form of cancer affecting the anal canal (the last

3-4 cms of your bowel) and the surrounding skin around the anal opening. While it is a rare cancer in the general population (1 in 100,000 people will develop the cancer per year in Australia), there is a subgroup of people that remains at highest risk. In men who have sex with men who are living with HIV, the rate has been noted to be as high as 1 in 1,000 people developing anal cancer each year. This is as common as other cancers in Australia like bowel and prostate cancer. While there has been a lot of attention given to the management of bowel and prostate cancer, currently very little attention is given to anal cancer.

What causes anal cancer?

The cause of anal cancer is still being intensely researched. Multiple factors are believed to contribute to increasing a person's risk of developing anal cancer:

Increasing age. Anal cancer has been detected as young as 35 but is more common in those who are older than 65 years old.

- Receptive anal intercourse. Receptive anal intercourse in both men and women also increases the risk of anal cancer.
- Having a low immunity. If your immune system is not working optimally this may increase your risk of anal cancer.
- Human papillomavirus (HPV). This is a very common virus that is sexually transmitted. There are many different types of HPV; some cause anal warts and others can cause anal cancer. It is important to understand though, that only a small proportion of those who have infection with the cancer causing types of HPV actually develop anal cancer. Studies have found higher rates of HPV in those living with HIV. This may be due to an impaired immunity that prevents the body clearing the HPV infection.
- **Smoking.** Being a current smoker increases one's risk of anal cancer.

continued overleaf

Can I prevent anal cancer?

There are currently two vaccines that can help protect against infection with HPV. However, for the vaccine to work best, it must be given before a person becomes exposed to the HPV type that causes anal cancer. So the earlier in one's sexual life that the vaccine is used, the more likely it is to work. In Australia, this is now a routine vaccine offered to school-aged boys and girls.

If you are a smoker, stopping smoking may help reduce your risk of anal cancer.

I don't smoke and I've had quite a few partners in my life (so the vaccine is unlikely to be of much help) ... can I do anything else to protect myself?

The good news is that, like other cancers, the sooner we can detect anal cancer, the greater chance of a complete cure and lesser chance of needing more invasive treatment. Studies have shown that if we can detect anal cancer when it is less than 1 cm, there is a very high chance of a complete cure. The problem is that currently, most cancers are detected when they are already more than 2 cms in size. This means an increased chance of dying from anal cancer as well as the need for chemotherapy, radiation therapy or more invasive surgery. So, it is important to try and detect anal cancer early.

How about anal pap smears?

A number of investigators in Australia are looking into whether men should have anal pap smears, in the same way that women have cervical pap smears. But there are big differences between the cervix (neck of the womb) and anus and currently no national health organisations are recommending anal pap smears. A number of studies are currently investigating this issue, such as the SPANC study in Sydney. (See the article on page 39 for further discussion of this study.) The SPANC study is currently recruiting. (http://www. nchecrsurveys.unsw.edu.au/spanc/).

So what can I do now?

There are three As that may help you detect anal cancer early.

Ask your doctor about anal cancer

Be fully informed about what anal cancer is. Your doctor is the best person to talk to about this. More information about anal cancer can also be found on the following authoritative websites:

- www.cancervic.org.au
- www.cancer.org

Type in 'anal cancer' in their search box for more information.

Alerts for potential symptoms

One of the main reasons for anal cancer to be detected too late is because people often ignore their symptoms and don't go see a doctor. Anal cancer can cause:

- anal bleeding
- anal discomfort or pain
- anal lump
- anal ulcer that won't go away.

It is important to remember that these symptoms are very common and in most cases do not mean you have anal cancer. There are many other conditions that commonly cause these symptoms. However if you notice any of these symptoms it is better to see your doctor for a check-up. Don't dismiss your symptoms as 'just haemorrhoids' and present to your doctor too late. Remember that early detection increases your likelihood of a complete cure from anal cancer. Your doctor will be able to examine you and reassure you in almost all cases, and put your mind at ease.

Annual anal check-up.

Just like it is wise to get an annual health check even though you may be feeling well, it is also wise to get an annual anal health check even if you don't feel any unusual symptoms around your anus. This ensures that if there is an early anal cancer, it may be detected very early.

What does an anal check-up involve? Firstly, the doctor will carefully examine the skin around the anal opening to look for any suspicious lesions. Secondly, the doctor will insert a gloved finger into the anus to feel for abnormal lumps and ulcers. This procedure normally takes less than a minute to perform. Although there are currently no official guidelines in Australia for an annual anal check-up, a number of health professionals recommend this examination once a year.

Currently there is an important study running in Victoria to gather data on the acceptability and usefulness of an annual anal check-up - the Anal Cancer Examination Study (ACEs) in HIV-positive men who have sex with men (i.e., the subgroup at highest risk for anal cancer). This study aims to monitor patients who are undergoing an annual anal exam to see if this method of screening causes any undue harm or worry and to see if the annual check-up will detect anal cancers earlier. The study involves one baseline questionnaire and a yearly short questionnaire after each anal exam to ask you about your experience of the anal check-up. If you are interested in participating in the study, or finding out more information, please call 1800 082 820. You can also visit the website www.anal.org.au for more information.

Conclusion

Although anal cancer may be an uncomfortable discussion to have, we must no longer ignore this elephant in the room. Despite the many advances in caring for those with HIV in Australia, anal cancer continues to be an important issue for men who have sex with men who are living with HIV. However there are simple steps that can be taken to minimise the impact of this cancer. Remember to Ask your doctor, be Alert to potential symptoms and consider getting your Annual anal check-up.

Jason Ong is a PhD Candidate at the Melbourne Sexual Health Centre.



Ageing with HIV in Victoria: findings from a qualitative study

By Karalyn McDonald, Julian Elliott and Lise Saugeres

The average age of people living with HIV in Australia is increasing due to improved survival and increasing age at time of diagnosis.¹ At the end of 2008, an estimated 17,444 people were living with HIV in Australia.² Modelling estimates and national surveys indicate the average age of Australians living with HIV is now over 45 years and the number of people aged over 60 years has been increasing at 12% per year since 1995.^{3,4,5} In Australia, the proportion of people with HIV over the age of 55 years is estimated to have increased from 2.7% in 1985 to 11.2% in 2000 and 25.7% in 2010, with a projected further increase to 44.3% by 2020.6

The Positive Ageing Project, funded by the Department of Health, Victoria, aims to explore the impacts of ageing and increased burden of chronic disease on people living with HIV and investigate social, welfare and health system approaches to improve experiences of ageing in this population. This paper reports on the findings from the qualitative study and will contribute to the second phase of the project which will develop a pilot program in response to the findings of Phase 1.

Method

Thirty semi-structured interviews were conducted in 2012 with people living with HIV aged 45 and over. Eight family members/carers were also interviewed, three as part of the interview with the person living with HIV, and four in separate interviews (for the sake of brevity, this article will only report on the findings of the interviews with people living with HIV).

We sought to recruit a higher number of participants with a significant number of co-morbidities in order to understand their experiences of HIV, ageing and living with the burden of other illnesses, as well as a smaller number of people with fewer co-morbidities. We also sought to find people from a variety of socioeconomic backgrounds, and people who lived in both inner and outer suburbs as well as in regional areas.

During the interview, participants were asked about key current life issues – regarding HIV and general health, child rearing (if applicable), relationships, employment, housing, finances, social connectedness, use of HIV and mainstream services, ageing with HIV and directions for the future. Interviews lasted approximately one hour and were transcribed verbatim and thematically analysed. Ethics approval was received from Monash University, Alfred Hospital and the Victorian AIDS Council/Gay Men's Health Centre.

Results

Participants

Twenty-five men and five women living with HIV were interviewed. Of the 25 men, 18 described their sexual orientation as homosexual/gay, one as bisexual, and six as straight. Four of the women described their sexual orientation as straight and one as bisexual. The participants were aged between 46 and 82 years old. The majority of the interviewees received the Disability Support Pension (DSP) or the Age Pension. Only five people were in paid work, four were selfemployed and one was employed part-time. Twenty-one people living with HIV earned a salary of less than

continued overleaf

continued from previous page

\$25,000 per annum. Twelve people owned their house or were paying mortgages, ten lived in public housing and three in supported accommodation. Only three gay and four straight men had a life partner, though one straight man was separated but still living with his ex-wife and children on a part-time basis. None of the women interviewed were currently partnered.

Slightly more than half of the participants were diagnosed with HIV during the 1980s. Of the six diagnosed in the last 12 years, the most recent diagnosis was 17 months prior to the interview. All were currently taking antiretroviral therapy (ART).

Health problems

The majority of participants had difficulties in managing multiple health conditions including major physical illnesses and depression. Factors such as physical pain, having to be hospitalised, feelings of loss and grief for friends and partners who had died of AIDS, feelings of having lost control of their lives, and worrying about the future all contributed to depression. While these illnesses and conditions had varying degrees of impact on people's lives, they had impacted negatively on their quality of life and their identity. Fatigue and exhaustion were common themes, significantly affecting quality of life:

At the moment it is almost daily exhaustion from the time I get up 'til 1.00 or 2.00 in the afternoon. I get up about 9.00, have breakfast and after that I just can barely keep my eyes open ... because I feel ill so often and ... things just don't get done ... by the time I take care of whatever normal chores I can, there is no time left. I also find that my, my thinking isn't as clear as it used to be. [My] decisionmaking skills have taken a dive, as have [my] organisational skills.

— Bart, 53, gay, diagnosed mid-1980s.

Depression was also a significant health issue for our participants. More than half of the people interviewed suffered from clinically diagnosed depression. There was a significant burden of grief for those who had lost so many friends to AIDS. The loss was also personal, how it impacted on lives not lived as they were intended and the impact it had on loved ones.

... you have got to learn to do the stuff around grief, loss, not being able to work, not being able to provide for your family, not being able to care for your children in the way that you would expect to care for them. You were going to have to die well before your children were grown up, you know. There is all that stuff in relation to family that gets taken away from you.

> — Justin, 56, straight, diagnosed 1996.

What is normal ageing anyway?

A number of participants also felt they lacked information about HIV and ageing. Many participants were aware of the discourse of 'accelerated ageing' and felt confused about what was normal ageing and what was attributable to HIV. Participants were also concerned about whether HIV would have an impact on their cognitive function:

... the fear of ... the unknown, you're not going to know if it's shortened your life span or not, you don't know, just living with the uncertainty of the medication that you're taking, whether it's going to work? What side-effects you can cope with? Then by taking copious amount of pills, but then they start to backfire, you think well am I taking too many? Yeah, a wastage to your body on, I know I've been experiencing a lot of bladder problems, whether that's from old age or it's just wastage of the muscles? You fear there are some horrendous side effects with women - you can tell by the stomach that I have is caused from the pills, it's called lipodystrophy. You fear what the diabetes is going to do to me, and I'm probably bordering on insulin, but I just really don't want to be sticking needles in myself, but I can see that down the track it most likely will be an option. So it's just trying to keep on top of your own physical health, and knowing whether it's old age or it's going to kill you or not, you know, the fear that a lot of these things can cause early dementia, so yeah.

- Penelope, 77, diagnosed 2002.

A number of participants indicated that they did not feel they had enough information about the experience of ageing and living with HIV. They were aware that they were the first cohort of people to age with HIV and felt there needed to be more services and information that targeted their experiences:

... there is also the stuff about how you cope with the ongoing day-today stuff of ageing, getting older in a nursing home, how you cope with that

Factors such as physical pain, having to be hospitalised, feelings of loss and grief for friends and partners who had died of AIDS, feelings of having lost control of their lives, and worrying about the future all contributed to depression.

... what services that are available for people, where you go to, what the quality of the care is and all that sort of stuff. ... there is not enough information out there about how you get those services because the services aren't in place yet ... like if I had to go to somewhere for care now I would go to somewhere where there would be issues around my HIV. There would be issues around me getting older for me, my mental health. My mental health would be a big management issue. And that's very common. And do they have the services in place to cope with that? I am not sure.

> — Justin, 56, straight, diagnosed 1996.

Losing independence and residential care

Participants who had already experienced major illnesses or comorbidities worried about becoming increasingly debilitated as they age. A related concern was not having anybody to care for them in their own homes and losing their independence:

I don't know that I'd have support if I lost my independence. That's the worry; you can't expect neighbours to look after you. My brother who is now 76 has lymphoma and ... he's really quite ill, I know I'm not going to be able to rely on him, ... my dearest friend, ... [is] dealing with his own health issues, so I really don't have [anyone]. So that always scares me, once I lose my mobility or my independence, what I would do, and that scares me.

— Bruno, 71, gay, diagnosed 1988.

A prominent theme in the interviews was the fear of having to live in mainstream nursing homes where they would not be used to caring for people with HIV and where they experience discrimination because of their HIV status and/or sexual identity:

...elderly gay men would not be comfortable living in a normal nursing home. It's not pleasant for anybody, but I think you'd run into... a lot of difficulties with it.

— Parker, 47, gay, diagnosed 1983.

I know of cases where people have gone into homes ... but have had to go back in the closet. Fancy ... at 70, because older people can be just as bad, and they're going into these homes and not being able to let people know they're gay, let alone HIV, and I think oh, that's back to the 50s.

- Bruno, 71, gay, diagnosed 1988.

Social connectedness

Many of our participants also experienced social isolation and loneliness. This was often due to the loss of friends and networks, either through death or increasing illness where participants were no longer able to participate as fully, or where participants were financially unable to participate in their social networks. Stigma and experiences of rejection often prevented people from seeking new friendships or networks. Similarly, many participants avoided intimate relationships due to the perceived difficulties in negotiating sexual relationships, including the fear of infecting a partner and the fear of rejection from a potential partner. Having major illnesses or disability, both in terms of body image and feelings of loss for the life they had previously, as well feelings of shame and guilt for having contracted HIV, all contributed to feelings of low selfesteem:

And it's very hard to make new friends, you know, to replace them.

Especially if you are HIV and if you are on a pension, because you know people say oh well come out we will be going out for dinner, etc. And then you find yourself having to pay part of an expensive bill and then you have got to think oh shit I shouldn't have done that.

- Ralph, 61, gay, diagnosed 1992.

Resilience

However, people used a variety of strategies in order to cope with HIV and other illnesses or conditions. For some, being actively involved within the HIV sector, or using HIV services and attending HIV-related social events was a way of finding support, a sense of community and purpose. Others found this through non HIVrelated organisations. Resisting the emphasis of HIV in their lives as well as participating in activities outside of HIV organisations and looking for different sources of support were all strategies that people used in order to cope with their situation and improve their quality of life. Several participants also took the approach of making positive changes to their lifestyle in order to try to improve their health:

I need to maintain a good level of physical fitness, and mental alertness, and I think exercise is probably as good a thing as any. I go for a walk,

continued overleaf

A prominent theme in the interviews was the fear of having to live in mainstream nursing homes where they would not be used to caring for people with HIV and where they experience discrimination because of their HIV status and/or sexual identity. even if it's just along the front of the building two or three times, and when I came out of hospital the other day one of the things I did was walk around the block at night, just to make sure that I could actually do that ... I keep a fairly close eye on what I eat, I eat [healthily], ... I don't eat a lot of sweets, I don't smoke, I think the last time I had a glass of wine was about three weeks ago.

— Richard, 64, diagnosed 2001, who was recovering from cancer.

Conclusion

Many of our participants were living with complex co-morbidities that required a great deal of medical and self-management and often had a negative impact on their quality of life. Many participants were unclear about how much of an impact HIV had on the ageing process and most felt they did not have enough information about this. Participants felt trepidation towards the future and uncertainty of how the combination of ageing and HIV would further impact their lives and their ability to remain independent.

The fear of ending up in mainstream nursing homes, where they may not receive adequate treatment and may be stigmatised or discriminated against because of their sexuality and/or HIV status, was also very prominent for those who did not have any family members or other people to care for them should they became very ill and lose their mobility. Social isolation and loneliness was also prominent among many of our participants. Some participants were no longer physically able to participate in activities that may reduce their social isolation and some were unwilling to enter new relationships – whether they be social or intimate – for fear of rejection after disclosing their HIV status. Limited financial resources also prevented some participants from engaging with friends and social networks.

However, a number of participants demonstrated great resilience and coping strategies in living long-term with HIV and ageing. Being actively involved in community groups and social activities, resisting the emphasis of HIV in their lives as well as making positive changes to their lifestyle were all successful strategies utilised by the people ageing with HIV in the study.

Acknowledgements

We would like to acknowledge our funders, the Department of Health, Victoria, the members of the Positive Ageing Steering Committee, the following individuals and organisations who assisted us with recruitment, James McMahon, Janine Roney, Karen Blyth, Julie Silvers, John Hall, Tania Phillips, Olga Vujovic, Rebecca Matheson, David Menadue, Ian Wooley, Kate Cherry, Melbourne Sexual Health,

The fear of ending up in mainstream nursing homes, where they may not receive adequate treatment and may be stigmatised or discriminated against because of their sexuality and/or HIV status, was also very prominent for those who did not have any family members or other people to care for them should they became very ill and lose their mobility. Positive Women, Straight Arrows, The Victorian AIDS Council and the Positive Living Centre, and the Alfred Hospital. Finally we thank the 30 people living with HIV and their eight carers who so generously shared their experiences with us.

References

- 1 National Centre in HIV Epidemiology and Clinical Research (NCHECR). (2009). *HIV/AIDS, viral hepatitis and sexually transmissible infections in Australia: Annual Surveillance Report, 2009,* NCHECR, University of New South Wales, Sydney.
- 2 Commonwealth of Australia. (2010). Sixth National HIV Strategy: 2010–2013. Commonwealth Department of Health and Ageing, Canberra.
- 3 Murray, J., McDonald, A., Law, M.(2009). Rapidly ageing HIV epidemic among men who have sex with men in Australia. *Sexual Health, 6*, 83–86.
- 4 Grierson, J., Power, J., Pitts, M., Croy, S., Clement, T., Thorpe, R., et al. (2009). *HIV Futures Six: Making Positive Lives Count*. Australian Research Centre in Sex, Health and Society, La Trobe University, Melbourne.
- 5 Grierson, J., Bartos, M., deVisser, R., McDonald, K. (2000). *HIV Futures II: The Health and Well-being of People with HIV/AIDS in Australia, 2000*, The Australian Research centre in Sex, Health and Society, Latrobe University, Melbourne.
- 6 Jansson, J., Wilson, D., Watson, J. (2011). Mapping HIV outcomes: geographical and clinical forecasts of numbers of people living with HIV in Australia. National Association of People living with HIV/AIDS, National Centre in HIV Epidemiology and Clinical Research, University of New South Wales, Sydney.

Dr Karalyn McDonald is a Research Fellow at the Department of Infectious Diseases, **Monash University and an Honorary Fellow** at the Australian Research Centre for Sex, Health and Society, La Trobe University. **Dr Julian Elliott is Head of the Clinical Research Team at the Department of** Infectious Diseases, Monash University, **Head of Clinical Research at the Alfred Hospital Infectious Diseases Unit and HIV Clinical Advisor, Centre for Population** Health, Burnet Institute. Dr Lise Saugeres was a Research Fellow at the Department of Infectious Diseases. Monash University in 2012. She conducted the interviews for this study and was the lead author for the report Ageing with HIV in Victoria: A Qualitative Study.



HIV, mental health and stigma: a brief survey of current research By Jason Appleby

Introduction

The intersection between HIV, mental health and stigma is a frequent subject for research. For people living with HIV, issues related to mental health can provide obstacles to accessing care, maintaining good health and may place some people at greater risk of developing other conditions. In addition, the role of mental health in helping prevent HIV transmission (and the implicit impact of mental health and stigma) have been well described in the literature.

This article summarises some of the recent research in this area, both local and abroad, with a focus on key messages and potential impacts on current health promotion practice.

Do people with HIV have higher rates of depression and other mental illness? Or is it the other way around?

De Hert et al. (2011) investigated potential reasons influencing why people with a serious mental illness (SMI) tend to have a shorter lifespan than the general population. While it is generally accepted that this excess mortality is due to physical illness, this research attempted to conduct a metaanalysis of the reported prevalence rates of various physical illnesses among people with a serious mental illness, in research from 1966 to 2010.

One of the findings of the analysis was that patients with serious mental illness are at increased risk for a variety of chronic viral infections, including HIV and hepatitis C. In fact, the researchers reported that: 'the prevalence of HIV positivity in people with SMI is generally higher than in the general population, but varies substantially (1.3-23.9%)." The authors also noted that 'the high frequency of substance abuse, sexual risk behaviors (e.g., sex without a condom, trading sex for money and drugs), and a reduced knowledge about HIV-related issues contribute to this high HIV prevalence.' However, it is important to note that these findings relate to analysis of international research and may not have as much relevance in the Australian context.

In the 'Primary health care project on HIV and depression'², researchers from the National Centre in HIV Social Research aimed to describe, measure and compare depression among HIVpositive and HIV-negative gay men. One of the key findings of this threeyear project was that homosexually active men were at high risk of major depression regardless of HIV status. While HIV-positive men had the highest rates of major depression in the study, HIV status alone was not associated with major depression after controlling for key social, behavioural and psychological factors.

Do interventions designed to improve the mental health of people with HIV have an impact on general health?

It is generally accepted that people with serious mental illness may experience more difficulty in maintaining adherence to antiretroviral medication.

continued overleaf

continued from previous page

The interplay between mental health and adherence is well described across a range of health conditions (not just HIV). Specifically, depression has a significant impact on adherence to antiretroviral therapy (ART), according to a meta-analysis published in 2011.³ Cross-sectional and longitudinal studies have established clear links between depression and poorer adherence to ART across all populations affected by HIV, in both resource-rich and resource-poor settings.

In addition, it is possible that other connections between mental health and better health outcomes exist for people with HIV. Some researchers have identified a relationship between stress, depression and immune response which may impact on HIV disease progression.⁴ This hypothesis is consistent with previous studies showing that, even after adjusting for ART adherence, depression is associated with worsened HIV outcomes – including CD4+ count decline, incident of AIDS-defining illness, and AIDS-related mortality.⁵

To this end, several studies have aimed to evaluate the efficacy of various 'secondary prevention' models to improve the health of people with HIV who also experience a serious mental illness. Secondary HIV prevention (or 'positive prevention') focuses on reducing risk behaviours associated with HIV transmission and increasing health and quality of life for people with HIV.6 Most of these studies evaluated the effectiveness of managing depressive syndrome disorders in the context of antiretroviral adherence, though there is other research on other serious mental illnesses and health outcomes.

In the context of depression and antiretroviral adherence, research findings are incredibly promising – both pharmaceutical (i.e., antidepressant) and psychological (i.e., cognitive behaviour therapy) interventions demonstrated improvement in adherence in people living with HIV and depression. A 2008 study, which looked at the impact of selective serotonin reuptake inhibitors (SSRIs – a form of antidepressant that boosts serotonin levels in the brain) on adherence and HIV biological markers (like HIV viral load and CD4+ count) concluded that 'compliant SSRI medication use was associated with improved HAART adherence and HIV laboratory parameters.'⁷

A 2009 randomised control trial aimed to evaluate cognitive-behavioural therapy to enhance medication adherence and reduce depression (CBT-AD) in individuals with HIV. Although this was a relatively small trial (three months outcome assessment) the findings were clear. Individuals who received cognitive behavioural therapy demonstrated much greater improvements in adherence to treatment, and had reduced levels of depression; these treatment gains were generally maintained at 6 and 12-month followup assessments.

The study investigators noted that: 'At the acute outcome assessment (3-months), those who received cognitive behavioural therapy evidenced significantly greater improvements in medication adherence and depression relative to the comparison group. Those who were originally assigned to the comparison group who chose to cross over to CBT-AD showed similar improvements in both depression and adherence outcomes. Treatment gains for those in the intervention group were generally maintained at 6- and 12-month follow-up assessments. ... By the end of the follow-up period, those originally assigned CBT-AD demonstrated improvements in plasma HIV RNA concentrations, though these differences did not emerge before the cross-over, and hence there were not between-groups differences.'8

Conclusion

While the outcomes of the above research appear straightforward, there is a relative paucity of evidence to assist health practitioners in providing specific advice or strategies for people living with HIV and a serious mental illness. Almost all of the research referenced above quoted the need for further research to identify optimal strategies and evaluate impact on health outcomes such as quality of life or relative morbidity (as opposed to biological markers such as viral load, CD4 count or adherence).

References

- De Hert, M., Correll, C., Bobes, J., Cetkovich-Bakmas, M., Cohen, D., Asai, I., et. al. (2011). Physical illness in patients with severe mental disorders. I. Prevalence, impact of medications and disparities in health care. *World Psychiatry* 10(1), 52–77.
- 2 Newman, C., Mao, L., Kidd, M., Saltman, D., Kippax, S. (2009). *Primary health* care project on HIV and depression: key findings. National Centre in HIV Social Research, University of New South Wales, Sydney. Retrieved from: http://nchsr.arts. unsw.edu.au/media/File/Primary_Health_ Care_Project_on_HIV_and_Depression.pdf
- 3 Gonzalez, J., Batchelder, A., Psaros, C., Safren, S. (2011). Depression and HIV treatment nonadherence. *J Acquir Immune Defic Syndr*, online edition. DOI: 10.1097/ QAI.0bo13e31822d490a
- 4 Leserman, J. (2003). HIV disease progression: depression, stress, and possible mechanisms. *Biological Psychiatry*, 54(3), 295–306.
- 5 Tsai, A., Weiser, S., Petersen, M., Ragland, K., Kushel, M., Bangsberg, D. (2010). A marginal structural model to estimate the causal effect of antidepressant medication treatment on viral suppression among homeless and marginally housed persons with HIV. Arch Gen Psychiatry, 67(12), 1282–1290. DOI: 10.1001/ archgenpsychiatry.2010.160
- 6 Sikkema, K.,Watt, M., Drabkin, A., Meade, C., Hansen, N., Pence, B. (2010). Mental health treatment to reduce HIV transmission risk behavior: a positive prevention model. *AIDS Behav*, 14(2), 252–62. DOI: 10.1007/s10461-009-9650-y
- 7 Horberg, M., Silverberg, M., Hurley, L., Towner, W., Klein, D., Bersoff-Matcha, S., et. al. (2008). Effects of depression and selective serotonin reuptake inhibitor use on adherence to highly active antiretroviral therapy and on clinical outcomes in HIVinfected patients. J Acquir Immune Defic Syndr, 47(3), 384–390.
- 8 Safren, S., O'Cleirigh, C., Tan, J., Raminani, S., Reilly, Otto, M., et. al. (2009). A randomized controlled trial of cognitive behavioral therapy for adherence and depression (CBT-AD) in HIV-infected individuals. *Health Psychol, 28* (1), 1–10.

Jason Appleby is the Treatments Editor for *HIV Australia*.



Chronic illness and co-morbidities for African Australians living with HIV

By Chris Lemoh

HIV is now a chronic illness, rather than a death sentence. The long-term complications of HIV infection, like those of diabetes mellitus, are preventable with constant monitoring, adherence to treatment management of co-existing health conditions and attention to general health. People diagnosed with HIV may now look forward to many years of good health and a life expectancy comparable to that of people without HIV, although the benefits of combination antiretroviral therapy are diminished by late diagnosis, older age at diagnosis and imperfect adherence to treatment.

For members of Australia's African communities, viewing HIV as a manageable chronic illness with a good long-term prognosis represents a major shift away from previous conceptions of HIV as equivalent to AIDS: a deadly, untreatable illness that has devastated many communities in their countries of origin. The relative invisibility of HIV in Australia and the overall public health focus on gay men and other men who have sex with men have left a paucity of information that addresses the needs of the various African and other culturally and linguistically diverse communities. HIV-related stigma still impedes African community access to appropriate information about HIV in Australia and is a barrier to timely diagnosis, treatment and support for African Australian people living with HIV.

African community awareness of HIV is growing, due partly to the efforts of health promotion agencies such as the Multicultural Health and Support Service (MHSS) in Victoria, the Multicultural HIV and Hepatitis Service (MHHS) in New South Wales and African community discussion forums such as those organised in 2011 and 2012 by the Australian Federation of AIDS Organisations (AFAO). However, much work remains to be done to provide African communities with accurate, relevant, appropriate information about the diagnosis and management of HIV, as well as important co-morbidities and health issues that influence long-term prognosis and quality of life for African Australians living with HIV.

Some health issues, such as smoking and obesity, are important for all people living with HIV, regardless of their origins. Others, such as tuberculosis (TB), chronic viral hepatitis and vitamin D deficiency, are of special importance to African Australian people living with HIV; both those affected and their treating doctors and other health professionals need to be aware of the rapidly evolving state of scientific knowledge and its application to individual situations.

Tuberculosis

Tuberculosis (TB) is a common opportunistic infection among people living with HIV in Sub-Saharan Africa and other regions where TB incidence is high. In addition to cases of active TB, it is estimated that up to one third of the world's population has latent TB infection, with the risk of reactivation at some time in the future. Latent TB is of particular importance to people living with HIV, whose risk of active TB is 10% per year, compared to 10% over a lifetime for those without HIV. Latent TB is diagnosed by means of a tuberculin skin test (TST, or 'Mantoux test') or by a blood test such as the QuantifERON Gold®. Both TST and QuantiFERON Gold® assess the risk of active TB, rather diagnosing active TB, so a positive test does not mean the person is contagious to others; latent TB is, by definition asymptomatic.

TB has been a focus of both traditional and modern medicine for millennia, but new challenges continue to arise and

continued from previous page

new advances are made in diagnosis and prevention. These developments have been invigorated by the Global Fund against TB, Malaria and HIV, which redressed decades of relative under-investment in TB research. One challenge is the rise of multidrug-resistant TB (MDR-TB) and extensively drug-resistant TB (XDR-TB) in Central Asia, Eastern Europe, Papua New Guinea - and southern Africa (particularly the Republic of South Africa). Multi-drug resistance renders standard first-line combination therapy ineffective; the treatment of MDR-TB and XDR-TB is even longer, more complex and toxic than that of sensitive TB, with correspondingly poorer outcomes. People with HIV travelling to regions where MDR-TB and XDR-TB are prevalent need to discuss with their doctors strategies to avoid exposure.

New developments in TB research include the development of more rapid diagnostic tests for infection and drug resistance, and trials of new, shorter treatments for both active and latent TB and exploration of the role of vitamin D deficiency in TB reactivation, prevention and treatment. The importance of these developments for African Australian people living with HIV will become evident over time. In the meantime, it is recommended that all people with HIV - particularly those from Africa and other regions of high TB prevalence - should be tested for TB and those with latent TB may need treatment with anti-TB drugs to prevent future reactivation, with the attendant symptoms and risk of mortality, both from the illness and its treatment.

Chronic viral hepatitis

Chronic viral hepatitis is caused by hepatitis B and hepatitis C viruses (HBV and HCV). HBV is transmitted through contact with bodily fluids (genital secretions, saliva, blood, breast milk) and from mother to child during pregnancy or delivery. HCV is less contagious, being transmitted primarily through blood-to-blood contact (although a small risk of sexual transmission also exists). Unlike hepatitis A and E, which are acute, short-lived illnesses acquired from contaminated drinking water, HBV and HCV infections often persist long-term.

People who acquire hepatitis B early in life are less likely than those exposed as adults to become unwell at the time of infection; however, infection in early childhood is more likely to become chronic. Exposure to hepatitis B is common in people from Sub-Saharan Africa. Chronic HBV infection is also very common, due to acquisition of the virus in early childhood (through mother-to-child transmission or by household contact). About 8% of the general population in many Sub-Saharan African countries have chronic hepatitis B, with similar prevalence in African diaspora populations living in other countries such as Australia. The number of African Australians with chronic HBV far outnumbers the number with HIV. but the true prevalence is unknown, since immigration health assessments may miss some HBV infections and routine screening after migration usually occurs only amongst pregnant women, newly-arrived refugees, health workers and people diagnosed with HIV. HBV infection is preventable with highly effective vaccines, which are universally administered to babies born in Australia; those born abroad may have missed the opportunity for routine immunisation, but screening for immunity to HBV is not routine except among health workers and recently arrived refugees.

Hepatitis C is also quite common in Africa, but its risk factors and transmission are less predictable than hepatitis B. Since hepatitis C is mainly transmitted via blood, the risk of infection arises from exposure to the blood of another person, either directly through blood transfusion or organs transplantation, or indirectly through the use of surgical instruments that have been re-used without sterilisation, or through the inappropriate re-use of needles intended for single use. No effective vaccine for HCV is available. In industrialised countries and North Africa, most hepatitis C transmission occurs through sharing of injecting equipment among people using illicit drugs, but in Sub-Saharan Africa, health care facilities and traditional initiation or healing procedures also pose risks of exposure. Exposure to HCV after migration most commonly occurs amongst people who inject drugs. Whilst the number of African Australian people injecting drugs is still very small, they are often extremely marginalised (even within the social networks of people injecting drugs); they experience intense stigma, contend with multiple mental health and social issues and encounter layered cultural and linguistic barriers to accessing appropriate services.

Chronic viral hepatitis may not produce any symptoms for many years, because the liver is able to compensate for the ongoing damage caused by the viral infection. However, the silent inflammation and fibrosis caused by these viruses reduces the ability of the liver to cope with additional strains such as infections, or some new medications. Symptoms of decompensated liver disease include jaundice (yellow discolouration of the eyes and skin), decreased appetite, drowsiness, confusion, swelling of the limbs and abdomen. Bruising or bleeding may occur spontaneously or following minor trauma. Lifethreatening bleeding from dilated veins in the oesophagus (gullet) may occur. All of these symptoms and signs usually occur only after the liver has suffered extensive damage from long-standing, chronic inflammation. However, the liver damage can be halted or partially reversed by treatment with antiviral drugs and immunotherapy. HBV can be controlled with lifelong antiviral drugs, some of which are also active against HIV. Another complication of chronic viral hepatitis is liver cancer, which is curable if diagnosed early, but has a very poor prognosis when it reaches the advanced stages of disease.

Early recognition of HBV or HCV infection is thus very important for African Australians and other people living with HIV. Both infections can be diagnosed with simple blood tests, but additional testing such as an abdominal ultrasound is necessary to assess the severity of liver disease and to screen for liver cancer. Diagnosis of chronic viral hepatitis not only enables assessment and treatment of the hepatitis, but also enables treating doctors to select appropriate medications and doses for the treatment of HIV. Screening for viral hepatitis is routine for people living with HIV, so few infections should be missed. Those without evidence of HBV exposure or chronic infection are susceptible and require immunisation.

New advances have occurred in the field of chronic viral hepatitis. HCV infection can now often be cured with antiviral medications that are much safer and better-tolerated than those previously used. Assessment of chronic HBV and HCV is now less likely to involve the invasive procedure of liver biopsy, thanks to the availability of sophisticated ultrasound technology to check for liver fibrosis (scarring). Early liver cancers can frequently be cured without major surgery. Newer antiviral drugs for treatment of HBV are less likely to induce resistance in the virus, reducing the need to switch therapy that is well-tolerated; however, much work needs to be done to improve understanding of the viral and human factors that influence the risk of liver damage from chronic HBV and HCV infection, the risk of cancer, as well as the social and psychological implications of a diagnosis of chronic viral hepatitis for members of Australia's African communities.

Vitamin D deficiency

Vitamin D deficiency is very common among African Australians and other people with dark skins or little exposure to the sun. The skin synthesises vitamin D when exposed to ultraviolet radiation. Since few people eat much of the foods containing vitamin D (oily fish), exposure to UV radiation in the form of sunlight is the major source of vitamin D. People with dark skins need much longer exposure to UV light to synthesise vitamin D, since the dark pigment (melanin) absorbs much of the UV radiation. This, together with the Australian lifestyle and climate, means that few African Australians will spend long enough in the sun to maintain adequate stores of vitamin D throughout the year.

Vitamin D is necessary for bone health as well as a properly functioning immune system. Vitamin D deficiency has long been associated with demineralised bones and increased fracture risk, but is also associated with increased risk of active TB. Many other potential associations with vitamin D deficiency are being investigated, including depression, schizophrenia, diabetes mellitus and some forms of chronic arthritis.

Vitamin D deficiency can be diagnosed with a simple blood test. Increased exposure to sunlight may be enough to correct mild deficiency, but if levels are very low, oral supplements are needed. Many different formulations are available, most of which do not need a doctor's prescription. Overdose or toxicity from supplements is extremely rare, since the form of vitamin D in the supplements needs an extra processing step in the body before it becomes active. However, it is wise to consult with a doctor and have regular tests to make sure that the supplements are having the desired effect to increase vitamin D levels. People with kidney disease need to have a special, active form of supplement that is only available by prescription, since their kidneys may not be able to activate the usual form of vitamin D found in overthe-counter supplements.

Challenges

African Australian people living with HIV and their treating clinicians thus face several challenges in the maintenance of health and wellbeing after diagnosis, in addition to those relevant to other people living with HIV. Providers of health and social support, along with people living with HIV, need to actively seek and discuss information about these conditions and issues, addressing them in the wider context of living with HIV in Australia after migration from Africa.

Further information is available from the following sources:

AFAO/NAPWA Factsheets:

- AFAO/ NAPWA (2008). The Importance of giving up smoking for people with HIV. http://www.afao.org.au/__data/ assets/pdf_file/0003/4593/Dec09_ factsheet_giveupsmoking.pdf
- AFAO/ NAPWA (2012). Living with HIV and hepatitis C. http://www.afao.org.au/library/ topic/living-with-hiv/afao_ factsheet_hepC.pdf

Centre for Culture, Ethnicity & Health

- General health information: http://www.ceh.org.au/ourprograms/our_programs_mhss/ health_information
- What is hepatitis? http://www.ceh.org.au/ourprograms/our_programs_mhss/ health_information/hepatitis

Centers for Disease Control and Prevention

- hepatitis C: http://www.cdc.gov/hepatitis/ HCV/index.htm
- hepatitis B: http://www.cdc.gov/hepatitis/ HBV/index.htm

Vitamin D deficiency:

- Dietary Supplement Fact Sheet: http://ods.od.nih.gov/factsheets/ VitaminD-HealthProfessional/
- Low vitamin D in Victoria: key health messages for doctors, nurses and allied health workers http://www.health.vic.gov.au/ chiefhealthofficer/publications/ low_vitamin_d_med.htm

Chris Lemoh is a physician practising in the areas of general internal medicine and infectious diseases. He is currently undertaking research on HIV in Victoria's African communities. He is also a former Board Member of AFAO.



Action on hepatitis C: new drugs, new resources By Finn O'Keefe¹

In February, Federal Minister for Health, Tanya Plibersek, announced that two new hepatitis C (HCV) drugs, telaprevir and boceprevir, will soon be subsidised through the Australian Pharmaceutical Benefits Scheme (PBS). The two direct acting antivirals (DAA) drugs are used to treat genotype 1 HCV, which affects more than half of the 226,700 Australians living with chronic hepatitis C. It is anticipated that these new medicines could double the HCV cure rate and shorten treatment duration by up to six months.

The upcoming PBS approval for the ground-breaking new drugs was applauded by organisations that support people living with chronic hepatitis, including AIVL (the Australian Injecting and Illicit Drug Users League) and Hepatitis NSW. Over the past 12 months, these organisations report that they have been receiving increasing requests from individuals living with genotype 1 HCV who need urgent access to treatment.

Early treatment is critical

Annie Madden, Executive Officer of AIVL, says that making these new treatments available quickly is critical, as many people in Australia with hepatitis C have been living with the disease for over 20 years and have already suffered substantial liver damage. 'A significant number of people with genotype 1 hepatitis C have been being discouraged from commencing hepatitis C treatment due to the promise of the availability the new drugs with significantly higher efficacy rates,' Annie Madden explains. 'It is very good news indeed that these medications will now be made available to those who need them before they could become ineligible for treatment due to the stage of their liver disease progression,' she concludes.

Stuart Loveday from Hepatitis NSW says that the upcoming PBS listing for the new DAA drugs presents an ideal opportunity for people living with HCV to talk to their GP about their treatment options. 'Hepatitis NSW encourages people living with hepatitis C, and especially those who have had hepatitis C for many years, to talk to their doctor about getting a referral to see a specialist to have a FibroScan[®] liver assessment done,' Mr Loveday says.

HCV and HIV co-infection

HCV infection can lead to liver cirrhosis and liver cancer. People with HIV / HCV co-infection are at particular risk, as the effect of HIV can accelerate progression of these diseases. HCV has also been shown to complicate the treatment of HIV because people with liver damage are more likely to experience hepatotoxicity (liver toxicity) when taking antiretroviral medication.

At a symposium on the clinical experiences of telaprevir held in Sydney in February – funded by Janssen Pharmaceuticals (manufacturers of telaprevir) – a series of specific case studies, including HIV co-infection, were discussed. These case studies highlighted specific complications of treatment with telaprevir, including consideration of contraindication with other medications and – in exceptional circumstances – preparation for emergency liver transplant if treatment fails.

Raltegrevir and tenofovir emtricitabine is the preferred combination of antiretrovirals for patients with HIV and HCV co-infection. Patients need to switch medication and be stabilised on the new combination several months before commencing treatment.

HCV and sexual transmission

Previously, sexual transmission of hepatitis C was thought to be rare. More recently, there have been increases in the number of cases of HCV transmission attributed to sex among gay men and other men who have sex with men in Australia, particularly among men living with HIV. These increases have also been reported in numerous locations overseas, including in the United Kingdom, Europe, and North America.

Sexually, unprotected anal sex is the risk for hep C. There are a number of activities that increase the risk, such as fisting, sex toys, group sex, and use of drugs for sex.

In May, the Australian Federation of AIDS Organisations (AFAO) launched a website, 'The New Deal: Gay Men, Sex and Hep C' (www.thenewdeal.com. au) that aims to provide gay men with information about sexual transmission of hepatitis C and how to prevent it, as well as information about testing for and treatment of hepatitis C, and HIV and hepatitis C co-infection.

Hepatitis C is a significant health issue in its own right but there are particular health concerns for those people living with HIV, as Robert Mitchell, President of the National Association of People with HIV Australia (NAPWHA) explains. 'Having both HIV and hep C can have serious impacts on the health of HIVpositive people. It can make treating both viruses more difficult and can also increase the progression of hep C and liver disease.'

The New Deal covers a range of information for HIV-positive men relating to co-infection with hepatitis C including testing for hepatitis C, treatment for both viruses and prevention options.

There are also a number of other activities and programs already happening and being planned around the country to address sexual transmission of hepatitis C in gay men, and specifically for HIV-positive gay men. The New Deal website has been designed to act as an information source in its own right but also as a central portal to direct people to activities around the country.

Footnote

 With input from Ben Wilcock (AFAO), Andrew Little (Hepatitis Australia), David Pieper (Hepatitis NSW), AIVL and ACON.

Finn O'Keefe is Communications Officer at AFAO and an editor of *HIV Australia*.

THE NEW DEAL GAY MEN, SEX AND HEP C



WWW.THENEWDEAL.ORG.AU



HIV and hepatitis C co-infection: can we avert another epidemic in Australia by acting fast?

By David Pieper

In this opinion piece, David Pieper provides reflections on the emergence of the sexual transmission of hepatitis C among HIVpositive gay men. With ground-breaking new hepatitis C treatments now available in Australia, he says it's time for both gay men and their doctors to address the silence and lack of knowledge surrounding hep C, to avert a new sexual health crisis among gay men living with HIV. Since 2002, researchers in UK, Europe and USA have been documenting the rise of sexually transmitted cases of hepatitis C (HCV), mainly among HIV-positive gay men.¹ Hepatitis C is transmitted from blood to blood. In Australia, this occurs mainly through the sharing of equipment used for injecting drugs such as needles and tourniquets.

Hep C is not classified as a sexually transmitted infection (STI). Longterm studies of heterosexual couples have confirmed that instances of sexual transmission of hepatitis C in monogamous relationships are extremely rare²; however, it is now recognised that the risk of sexual transmission of HCV is higher for people with HIV, as well for as people who have multiple sexual encounters with partners who have HCV³.

Initially researchers doubted what they were being told by patients when gay men with HIV – but with no history of injecting drug use and no other risk factors – were presenting with recently acquired hep C infections. Many in the medical profession initially denied the possibility of a new wave of sexually transmitted HCV, preferring to believe that gay men - who had survived an epidemic that had seen half their friends and lovers go to an early grave and who had been instrumental in fighting for access to drugs to ensure their own survival - would hide key health information from their doctor. Sadly, one of the consequences of this denial has been a ten year delay in the response to what is now described as an epidemic, but not before it cut a huge swathe through the 'hard sex' scenes in London, Berlin and several other European and American cities.

From the HIV perspective, it is difficult to understand why researchers would question patient accounts of their exposure risk. While trust and cooperation between HIV patients and their GPs has continued to be at the forefront of medical breakthroughs since the HIV epidemic began, this is not the case for most other diseases, including HCV. Control of hep C treatment remains firmly with the gastroenterologists and hepatologists, despite the presence of s100 prescribing GPs with a long history of treating HIV patients and a trust developed over many years. We need to build patient trust in relation to hep C rather than question it. We should be using the strength of this doctor-patient relationship to encourage people into treatment, rather than creating a barrier to treatment by referring hep C patients to unfamiliar liver clinics.

But it's not just the medical profession that has had difficulty coming to terms with sexual transmission of hep C. With over 80% of those living with chronic hep C in Australia being people who inject drugs, organisations representing people who use drugs have felt a sense of ownership of the hep C epidemic for a long time. I know of several people in the injecting communities who distanced themselves the need to practice safe sex to prevent sexual transmission of hep C on the grounds that 'it's blood to blood, not sex'.

The presence of a whole new cohort of gay men with sexually transmitted hep C poses a threat to this comfortable position. If you define sex as the act of penis inserted into a vagina, then yes, there is no such thing as sexual transmission of hep C, but to do so negates the sexual expression of gay men, lesbians, transgender people and pretty much anyone who goes beyond the missionary position; a stance which has as its foundation an attitude that says 'I'm OK with gays, but you do in bed as sex is not exactly sex' – that's homophobia.

STIs also still provoke horror and hysteria among heterosexuals in a way they have long since ceased to do among gay men. In the early days of the HIV epidemic, when HIV was still considered a 'death sentence', many people considered a blood borne virus such as hep C less of a 'dirty secret' than a sexually transmitted infection like HIV.

The Hepatitis organisations in Australia and elsewhere have their hands full

providing advocacy and services for the communities that comprise the majority of the hep C patient load. In Australia, that's current and former users of injecting drugs, people in prison and Aboriginal and Torres Strait Islanders. Young people are high risk group too, because the median age for initiation into injecting drug use is 19 and because of the rise of tattooing and piercing in unsterile conditions overseas, and by unlicensed operators. Gay men with HIV hardly even make it onto the radar among the other 225,000 Australians living with hep C (that's 10 times the number of people with HIV alone).

But we as gay men are also complicit in the hep C denial. A recent community forum held by ACON and Hepatitis NSW highlighted that approximately 500 to 1,000 HCV cases have so far been identified among HIV-positive Australian gay men; in these cases it is clear that transmission did not occur through the most common routes of transmission. Did we really think we could get away with serosorting and barebacking, happily ignoring hep C? Or were we let down by the organisations who we relied on for this information, that had also not yet come to terms with the issue?

While HIV organisations have the resourcing and community connections to lead the response to HCV sexual transmission among HIV-positive gay men, they did not have the mandate to act. Way back in the early 90s, when there were suggestions of using the might of ACON to service the hep C community, I know I was one who resisted, naming hep C as the 'junkies' disease. We were not involved in 'dirty' business of sharing needles and besides we were far too busy taking care of our own, who were then sick and dying of HIV.

Then Freddy Mercury died and the whole world lost its innocence over HIV and began to talk about it. And gay men haven't stopped talking about it since – inventing the language of safe sex, serosorting, and strategic positioning and even 'don't ask, don't tell'. But when it comes to hep C we've been silent; far too silent for far too long.

While we as gay men are now more comfortable discussing HIV status (be it negative or positive) and very comfortable negotiating our sex lives and relationships – either in light of, or around, or even in spite of differences in serostatus – we are crap when it comes to talking about hep C.

Men who are hep C positive – even those who are quite open about their HIV status – are afraid to disclose their status for fear of rejection. The level of knowledge about how to stay safe is disappointingly low from a community that is in every other way so well informed about its sexual health. Worst of all, the uptake of hep C treatment is well below what is needed to get this thing under control in our community, or indeed, just to treat people with moderate to serious liver disease – let alone start treatment as prevention.

continued overleaf

... the uptake of hep C treatment is well below what is needed to get this thing under control in our community, or indeed, just to treat people with moderate to serious liver disease – let alone start treatment as prevention. The new deal is in town, the rules have all changed and we need to develop the language to negotiate our way through it. But we are never going to get there until we can talk about it openly and honestly.

While the exact mechanism of sexual transmission is not yet completely understood, some things are clear. Sexual transmission of hep C between gay men is linked to a combination of risk factors: being HIV-positive; previous exposure to other STIs; participation in a sex parties; use of party drugs, especially crystal meth, recreational use of Viagra[™]; use of sex toys; and especially fisting. None of these behaviours in isolation is implicated, but microscopic amounts of blood transmitted between partners where several of these risk factors are present seems to cover the majority of cases. Unlike HIV transmission, hep C does not appear to be transmitted through semen, although this is currently under further investigation.4,5

By a stroke of luck – or more precisely, targeted political advocacy borne of the same fighting spirit that achieved compassionate access to HIV medicine that brought back so many of our friends and lovers from the brink of death in 1995 – there are new drugs now available on the PBS to treat the most common and difficult to treat genotype of hepatitis C.

A pioneering advocacy project launched by Hepatitis NSW last year has contributed to the PBS listing of boceprevir and telaprevir, more than 18 months earlier than might ordinarily have been expected if government processes were left to run their natural course. These new direct acting antiviral (DDA) drugs – of the type that people with HIV have been taking for years now – when taken in combination with the backbone treatment of interferon and ribavirin, will halve the duration of treatment for half of the people with hep C genotype 1 from 12 months to 6 months and increase an individual's chance of success in permanently clearing the hep C virus from around 50% up to 80%. That's got to be good news.

I suggest that for people co-infected with HIV and hepatitis C, it is good news on the same scale as the news of combination therapy to effectively control HIV, as announced at the World AIDS Conference in Vancouver in 1996.

While co-infection with HIV and hep C presents a set of unique problems - including faster progression to liver disease and complications in the treatment of HIV - it also presents a particular opportunity that should not be overlooked. Unlike most people with hep C, gay men with HIV who acquire hep C through sexual transmission typically have years of experience managing their health with a chronic condition and are often already being closely monitored by their doctor. This means that a hep C diagnosis is more likely to be picked up in the acute phase (within the first few months of infection), sometimes even as a result of a seroconversion illness. Treatment

A pioneering advocacy project launched by Hepatitis NSW last year has contributed to the PBS listing of boceprevir and telaprevir, more than 18 months earlier than might ordinarily have been expected if government processes were left to run their natural course. during the acute phase provides the best possible chance of clearing the virus. But doctors must follow guidance on regular testing of HIV patients for hep C and the onus is on the patient to commence treatment as soon as possible.

Taking the lead from ACON's new treatment as prevention initiative, Ending HIV, and Australia's history of rapid effective and peer-led response to controlling the spread of HIV, we have the chance to get this virus under control in our community by encouraging gay men infected with hep C not to wait, but to treat their hep C as soon as possible after diagnosis. Treatment will not only reduce the number of men on the scene carrying the hep C virus, but will provide an incentive for us to discuss and discover effective strategies to stay hep C free while pursuing pleasure. If you are a gay man with hep C, now is the right time to think about treatment.

You can contact the Hepatitis Helpline on 1300 437 222.

References

- For example see: van der Helm, J., Prins, M., del Amo, J.,Bucher, H., Chêne, G., Dorrucci, M., et al. (2011). The hepatitis C epidemic among HIV-positive MSM: incidence estimates from 1990 to 2007. *AIDS*, 25(8),1083–91.
- 2 Terrault, N., Dodge, J., Murphy, E., Tavis, J., Kiss, A., Levin, T., et al. (2013). Sexual transmission of hepatitis C virus among monogamous heterosexual couples: the HCV Partners Study. *Hepatology* 57(3), 881–9. DOI: 10.1002/hep.26164, 2013
- 3 Centres for Disease Control (CDC). (2012). Hepatitis C FAQs for public [online]. Retrieved from: http://www.cdc.gov/ hepatitis/c/cfaq.htm
- 4 Briat, A., Dulioust, E., Galimand, J., Fontaine, H., Chaix, M., Letur-Könirsch, H., et al. (2005). Hepatitis C virus in the semen of men coinfected with HIV-1: prevalence and origin. *AIDS*, *19*(16), 1827–35. DOI: 10.1089/apc.2009.0111
- 5 Leruez-Ville, M., Kunstmann, J., De Almeida, M., Rouzioux, C., Chaix, M. (2000). Detection of hepatitis C virus in the semen of infected men. *Lancet*, 356(9223), 42–3.

David Pieper is the Coordinator of the C me Project at Hepatitis NSW and Co-convenor of the SexC Project, an alliance between ACON and Hepatitis NSW.



Testing for hepatitis C as a sexually transmissible infection: understanding health practitioners' knowledge and attitudes

By Soenke Tremper and Guy Hussey

Background

In 2011, the Victorian Department of Health noted an increase in diagnoses of hepatitis C (HCV) virus infections among men who have sex with men and who live with HIV.¹

In early 2013, Living Positive Victoria convened a reference group to assist in the development of health promotion initiatives that seek to lower the risk of HCV infection among HIV-positive men who have sex with men. During the first reference group meeting in March 2013, the group identified that general practitioners (GPs) who provide care for HIV-positive men who have sex with men may have particular perspectives about these men's risk behaviours, knowledge, and attitudes regarding HCV prevention techniques. The reference group decided, as a first step, to develop a survey that identifies the GPs' knowledge and attitudes regarding HCV transmission among HIV-positive men who have sex with men.

General Practice Victoria (GPV) developed a brief electronic survey, which was reviewed by Living Positive Victoria's health promotion team. The survey was not conducted as a formal research project, but rather as a means to inform project development.

Sample selection

The survey was sent to a total of 72 health practitioners, consisting of: Victorian HIV s100 authorised general practitioners (34), general practitioners (5), sexual health physicians (12) and infectious diseases physicians in Victoria (21). GPV used two email groups, maintained by its Sexual Health, HIV, Hepatitis Education (sh3ed) program, to disseminate the link to the online survey.

Email group one: 'HIV s100 GPs' – This group consisted of GPs and sexual health doctors with a specific interest in HIV. It should be noted that

this group includes all Victorian HIV s100 authorised GPs, and is therefore very highly representative of the target population (Victorian HIV s100 authorised GPs).

Email group two: 'HIV ID Clinics'

- This group consisted of infectious diseases physicians and some registrars working across the main Victorian infectious diseases outpatients clinics. This list was included to understand if there is a difference in knowledge and attitudes depending on care setting.

The survey

A total of 13 responses to the survey were received. At 18% (13/72), the

response rate was low, and would generally be considered suboptimal in a formal research environment; however, the clinicians who participated in this informal questionnaire represent the majority of high caseload primary care centres and sexual health clinics. While information gained from this survey should not be generalised, it does provide useful insights into the knowledge levels, attitudes, beliefs, and practices of healthcare professionals working a high caseload setting in Melbourne.

GPs who were HIV s100 accredited made up the majority of survey respondents (53.9%), followed by infectious diseases physicians (30.8%) and sexual health physicians (15.4%). No sexual health physicians who work in Melbourne Sexual Health Centre's Green Room (HIV referral clinic) participated in this survey.

HCV awareness – impact on practice

The majority of respondents (84.6%) said they were aware of the increase in diagnoses of HCV infections among HIV-positive men who have sex with men noted by the Victorian Department of Health in 2011. Of the eleven respondents who were aware, eight stated that this awareness changed the way they practise. The two participants who were not aware requested further information, which was provided via follow-up email through GPV.

Table 1 shows individual responses of the eight GPs who changed the way they practise, or why they deemed no change was necessary. Responses indicate that these participants felt that they have integrated HCV testing into their routinely undertaken panel of tests for HIV-positive men who have sex with men. Some indicated that they had done so before the noted increase in diagnoses.

Twelve of the 13 respondents stated that they had integrated HCV testing into their routinely undertaken panel of tests for HIV-positive men who have sex with men. These responses suggest that the vast majority of participants regularly test for HCV, driven by perceived risk strata rather than event driven testing.

Testing for sexually adventurous men

Although eleven of 13 respondents were aware of an increase in diagnoses of hepatitis C among HIV-positive men who have sex with men, only four participants tested sexually adventurous men at least once every six months, in accordance with the National Hepatitis C Testing Policy.² Eight of 11 (72.7%) participants did not adjust frequency of hepatitis C testing with increasing risk profile. (See Figure 1.) This suggests that these participants either:

- set an inappropriate testing frequency for a high risk group and applied this to lower risk groups; or
- did not see value in testing more frequently despite increased risk; or
- were not aware that there is increased risk depending on sexual practices; or
- use other strategies that this survey did not appropriately cover; or
- experience other barriers that this survey did not cover.

Table 1

Change in practice due to hep C awareness

Annual HCV screening in HIV-infected patients and discussion and passing on info to patients [regarding] potential sexual transmission

Counselling HIV-positive MSM about this risk and attention to HCV screening as part of STI screening in those at risk

I have always included HCV screening in the routine STI screening in my patients. When I talk to them about risks of STI transmission I include HCV

Discussed this with my [patients], particularly my HIV pos [patients], encouraged condoms with casual partners

Advise all patients, discuss practices and risk

More frequent testing of hep C in HIV-positive men

More likely to have a discussion re: high risk sexual practices and IVDU [intravenous drug use] amongst HIV-positive men.

[No], already routinely screening HIV-positive men who have sex with men for hep C

Patients have regular LFTs [liver function tests] and should have repeat HCV screening

Table 2

Who qualifies as sexually adventurous MSM?

SOPV [sex on premises venues]/group sex/fisting

It's not a term I use, but the people I consider most at risk for dual HCV acquisition are those who are having unprotected RAI [receptive anal intercourse], particularly those who have many/ anonymous partners and/or those who combine sex with drug taking and/or those who fist etc.

UAIC [unprotected anal intercourse] with multiple partners, particularly if blood/trauma during sex

Higher number partners, group sex, crystal users

Fisting, blood sports

Large no of partners, >10 per quarter, group sex, toys, travel to high risk areas

Frequent attenders of SOPV

Those engaging in fisting

Those engaging in sex parties/multiple partners at a time

Those who practice unsafe sex with recreational drugs involved

All patients having three or four monthly LFTs [liver function tests] as well as annual Hep C. Sexually adventurous includes people in open/non monog [non-monogamous] relationships/ casual sex partners/BDSM [bondage, discipline, sadomasochism]/blood letting/IVDU and meth as part of sex

'Someone who has more sex than their doctor'

MSM who self-identify as regularly having more than one partner



Figure 1: HCV test frequency

To understand what participants understood 'sexually adventurous' to mean, and how this meaning may influence HCV testing, participants were asked to provide a definition. Table 2 provides all ten answers received.

With few exceptions, participants' free text answers suggest an understanding that HCV transmission occurs where blood is present or where people engage in abrasive practices in or around sex.

Drugs appear to be referred to in two ways: as stimulants that reduce risk awareness, and as a mode of infection (sharing of injecting equipment). Some of the answers centre on particular practices whereas others focus on frequency of sex; others offer a mix of practices and frequency. None of the answers identify possible drivers of behaviours. The threshold for who is or is not considered sexually adventurous varies considerably, from 'regularly having more than one partner' through to 'fisting, blood-sports'.

Health promotion issues

Lastly, participants had the opportunity to share anything else that came to mind. Two comments were received:

'I find that many [patients] aren't worried about Hep C as they perceive it is curable, or they perceive themselves as low risk even when having regular unprotected sex.'

and

'I think the message is getting to them reasonably rapidly.'

There were differing opinions about penetration of health promotion messages between these two participants. The first suggests that patients who have unprotected sex regularly don't perceive themselves to be at risk, whereas the second suggests that information about HCV as a sexually transmissible infection is being received.

A key question to answer is which communities or groups are receiving messages. It is possible here that the two respondents are referring to two groups at differing risk (e.g., men who have sex with men vs sexually adventurous men who have sex with men and who live with HIV).

These two comments reflect a view that some HIV-positive men who have sex with men are aware of the risk (higher perceived susceptibility), but ignore it since HCV is curable (lower perceived seriousness). This issue is highly relevant to development of health promotion regarding HCV targeting sexually adventurous HIV-positive men.

Conclusion

Survey responses indicated that most participants believed either that their practice already accommodated for hepatitis C as a sexually transmissible infection in at-risk individuals, or that they had adjusted their practice in light of the noted increase in diagnoses.

Most participants (12/13) test HIVpositive men who have sex with men for hepatitis C regularly (once per annum), regardless of whether they are considered sexually adventurous or not. Of note, there is a gap between what participants identify as appropriate testing frequency for sexually adventurous men (annually) and what the National HCV Testing Policy recommends (every six months). There is also diversity in which behaviour qualifies as sexually adventurous: the threshold for who is or is not considered sexually adventurous varies considerably, from 'regularly having more than one partner' through to 'fisting, blood-sports'.

The identified inconsistencies and the gap between participants' practices (based on their attitudes and beliefs) and current policy/guidelines need to be addressed. This reflects a lack of resources for healthcare providers. Resource development is needed to:

- position hepatitis C as a sexually transmissible infection in HIV-positive men who have sex with men, and
- increase understanding of risk associated with particular sexual practices.

The survey results suggest that healthcare providers' beliefs and attitudes towards sexually adventurous men - and understanding of the sexual practices they engage in - need to be better understood, in order to ensure that providers change practice with respect to identification of risks and adjusting clinical care accordingly. As the identified gaps seem to be based on attitudes and beliefs rather than a pure clinical/medical knowledge gap, GPV would strongly support a joint community and GP led campaign that seeks to improve awareness of HCV risk associated with particular sexual practices, with resources developed by healthcare professionals and community representatives, working together in partnership.

References

- Mahoney, A., Donnan, E., Lester, R., Doyle, J., Knox, J., Tracy, S., et al. (2013). Beyond injecting drug use: investigation of a Victorian cluster of hepatitis C among HIV-infected men who have sex with men. *Medical Journal of Australia, 198*(4), 210–214. DOI: 10.5694/mja12.10556
- 2 Australasian Society of HIV Medicine (ASHM). (2012). National hepatitis C testing policy. ASHM, Sydney. Retrieved from: http://testingportal.ashm.org.au/hcv

Soenke Tremper is the team manager for population health at General Practice Victoria. Guy Hussey is Senior Programs and Policy Officer at Living Positive Victoria.

... two comments reflect a view that some HIV-positive men who have sex with men are aware of the risk (higher perceived susceptibility), but ignore it since HCV is curable (lower perceived seriousness).



Cardiovascular disease, smoking and HIV: findings from the HealthMap qualitative study

By Karalyn McDonald and Julian Elliott for the HealthMap Project Team

Cardiovascular disease and HIV

Since the advent of HAART (highly active antiretroviral therapy) in 1996, HIV has progressively transitioned from a life-threatening to a chronic disease. The average age of people living with HIV in Australia is now over 45 years and modelling estimates that the number of people aged over 60 has been increasing at 12% per year since 1995.^{1,2,3}

However, despite the majority of people who take antiretroviral therapy (ART) having fully suppressed HIV viraemia and high CD4+ T-cell counts⁴, the life expectancy for people who are receiving effective ART is only twothirds that of the general population⁵. One of the main reasons for this is the onset of cardiovascular disease (CVD). Furthermore, 'serious non-AIDS events', such as CVD, are now more frequent than AIDS events, have

a higher risk of death and occur with increased frequency compared with age matched general population cohorts.6 ART toxicity, health behaviours and HIV infection itself, possibly due to ongoing immune activation associated with HIV infection⁷ are all believed to contribute towards the increased risk of CVD in people with HIV. Yet, importantly, one of the major risk factors for CVD in HIV-positive people is smoking. More than onethird of people with HIV in Australia are smokers, with one estimate indicating that 42% are smokers8, which is more than twice the rate of the general Australian population.

Method

The aim of this study was to help inform the design of HealthMap, a complex health, self-management intervention for people with HIV. The focus of HealthMap is the reduction of the risk of CVD, which will be assessed using a cluster randomised control trial in 2014. Semi-structured, face-to-face interviews were used to explore practices and motivations of participants to maintain and manage their health. In addition to exploring the role of HIV in people's lives and how they thought about ageing or growing older, we also asked them to detail their current practices aimed at maintaining their health and who supported them in these practices. We asked participants if there was anything they would like to be doing differently in relation to their health, what they thought could help them achieve any changes they identified and where their main sources of health information came from. Current smokers were asked to detail their thoughts about smoking, desires to quit and any quit attempts - which for the sake of brevity, will be the focus of this article.

Thirty-three interviews were conducted in Victoria and NSW in 2012, including in regional and rural areas. Recruitment included participants who are non-community identified and socially isolated, men and women, gay and straight. Interviews lasted approximately one hour and were transcribed verbatim and thematically analysed. Ethics approval was received from Monash University, Alfred and Prince of Wales Hospitals, Victorian AIDS Council/Gay Men's Health Centre and ACON.

Results

Thirteen participants in our sample were currently smokers. A further six men said they did not smoke. Of these six men, two men had quit in the weeks prior to the interview and one had quit two years ago. A further two participants said they only used tobacco when they smoked marijuana and another said he was an occasional social smoker. During the interviews we explored their smoking practices and motivations, if any, to quit. All of the smokers were men, aged between 20 and 69. Fourteen identified as gay, three as straight, one as 'mostly straight' and another as 'confused'. Nine men were diagnosed before HAART and 17 were taking antiretroviral medication. Eleven men were taking other medication for co-morbidities, including emphysema, high blood pressure, high cholesterol, lupus and depression.

Two men had been diagnosed with emphysema and another two men had already experienced myocardial infarction (heart attacks). Only one of these men had quit smoking and he had had two heart attacks in the previous two years. He had only just ceased smoking three weeks prior to his interview and he said this was largely driven by feeling unwell or vomiting whenever he smoked. The second man who had experienced a heart attack said whilst he did not smoke while he was in hospital, he starting smoking again as soon as he was discharged, finding quitting smoking more challenging than giving up heroin and methadone. The two men with emphysema acknowledged that they should quit and one man

said he had considered hypnotherapy, however, he also acknowledged that he did not feel an urgent need to quit or to create expectations for himself that he believed he could not meet.

It is important to note that when talking about quitting, most of the men raised other concerns that did not pertain to their health. For example, the amount of money spent on smoking tended to be a bigger issue for most smokers in this study. This is not surprising when considered in the context of living on pensions and/or reduced income. Most smokers said they wanted or hoped to quit in the future and quite a few had already identified rewards, as a motivation, that they would buy themselves when they got around to quitting; usually in the form of technology such as computers, tablets or smart phones. It was often recognised that the money saved from quitting or reducing their smoking would free up funds for other pursuits:

I've promised myself that when I give up I'll get an iPhone or an iPad. — Int 3

There are things that I want to buy ... I am going to have to give up cigarettes to get them. I want to get a new computer.

— Int 4

Most smokers also identified the social context of smoking such as meeting with friends, smoking when drinking or smoking during daily routines such as with a morning coffee or using the computer. It was often described as a pleasurable activity, one that was associated with social connectedness and was often entrenched in one's identity. One smoker described his habit as an 'insidious friend' and another described his sexual identity and sexual pleasure as being explicitly linked to smoking:

But I have actually got a fairly unusual sexual fetish which is watching people smoke. I have had this since I was 12 years old. It's ... somehow my sexuality developed that way. The first person that ever, or first guy that ever turned me on was blowing a smoke ring at the time, instead of being attracted to the guy I became attracted to the smoke rings and just sort of went down that road. — Int 2 When talking about quitting, some said they would have to go 'cold turkey' but that they needed to be completely mentally prepared for this. However, most said they preferred the idea of reducing the amount they smoked in small steps and, in fact, many had already done this, saying they cut habits as many as 60 cigarettes a day down to 10 or 15. Many identified the problem of being in social gatherings with other smokers, noting it would be easier if their friends did not smoke:

But the trouble is when you go out, and if all my friends decided to give up cigarettes it would make it a lot, lot easier.

— Int 4

Only two smokers said they would not quit. These men said they had already experienced too many losses (including having given up drugs/ heroin) and that this was one last pleasure that was not negotiable. These men said things like, 'I have to die from something' or, 'I have lived longer than I should have anyway':

That's the only habit I've got. You know, and cigarettes keep me ..., it's my last refuge ... So what's worse? Cigarettes or Hammer or Done? — Int 15

In thinking about supporting people with HIV to quit smoking, we asked participants to detail where they received most of their health-related support from. Nearly all participants said their HIV clinician was their most significant health support, however, most did not discuss desired healthrelated changes with their clinicians. Generally it was perceived that there was insufficient time to deal with additional health concerns. Whilst most smokers said their clinician had told them to stop, many said it did not come up very regularly and they did not view their clinician as someone who would be able to support them in achieving smoking cessation. Most participants believed they would be better equipped to cease smoking if they were well supported, to help them

maintain their resolve or focus on their goals:

Sometimes I think that smoking should be treated just like any other addiction. I'd be quite happy to go to like an Odyssey House for smokers, be brilliant if something like that was available, but it's not unfortunately. Yeah I've been in touch with Quit Line a couple of times for advice, information, but I haven't managed to get past the receptionist who's said we'll post you out some info, which is pretty much what you read on the cigarette pack these days, just a bit lengthier, and things you already know. Also I'd have to find something to replace it with, and I'm having trouble working out just what that would be. The only thing I could think of is lollies, but I just would end up eating two packs of Fantails a day! — Int 3

Conclusion

Health practices or behaviours, such as smoking were not always influenced by HIV. For example, wanting to quit or reduce smoking was often linked to freeing up money for other pursuits. Health is often considered in the context of doctors' appointments, which leaves few opportunities to engage people in discussions about health-related behaviours and goals. Also, although participants were aware that their clinicians wanted them to cease smoking, many did not perceive that they would receive the support they would require to sustain their non-smoking behaviour. Most smokers indicated they believed they would benefit it they were to receive additional support to help maintain their resolve while quitting. Having strategies while out with other smokers and speaking with a peer who had successfully quit smoking were identified as important.

As has been identified by the participants in this qualitative study, there are challenges in designing an intervention for the self-management of strategies for people with HIV to reduce the risk of CVD in that the design needs to acknowledge the social context of people's lives. The complexities of people's lives need to be considered as we develop an intervention that not only reduces the risk of cardiovascular disease but also adds value to the day-to-day lives of people living with HIV.

Acknowledgements

We would like to acknowledge our 33 participants who generously shared their experiences; our funders: the National Health and Medical Research Council; our recruiters: Julie Silvers, Kit Fairley, Richard Moore, Jeffrey Post, David Baker, Neil McKellar-Stewart, Janine Roney, Norm Roth, Kristine Millar, Anna Avoledo, VAC/GMHC, ACON Northern Rivers; and HealthMap partners: Monash, Alfred, ASHM, NAPWHA, Deakin, Flinders, La Trobe and Melbourne Universities and the Victorian Department of Health.

References

- Murray, J. McDonald, A., Law, M. (2009). Rapidly ageing HIV epidemic among men who have sex with men in Australia. Sexual Health, 6, 83–86.
- 2 Grierson J., Power, J., Pitts, M., Croy, S., Clement, T., Thorpe, R., et al. (2009). *HIV Futures Six: Making Positive Lives Count*. Australian Research Centre in Sex, Health and Society, La Trobe University, Melbourne.
- 3 Grierson, J., Bartos, M., deVisser, R., McDonald, K. (2000). *HIV Futures II: The Health and Well-being of People with HIV/ AIDS in Australia.* The Australian Research Centre in Sex, Health and Society, Latrobe University, Melbourne.
- 4 Falster, K., Gelgor, L., Shaik, A., Zablotska, I., Prestage, G., Grierson, J., et al. (2008). Trends in antiretroviral treatment use and treatment response in three Australian states in the first decade of combination antiretroviral treatment. *Sexual Health*, 5(2),141–54.
- 5 Collaboration. A, Therapy, Cohort. (2008). Life expectancy of individuals on combination antiretroviral therapy in high-income countries: a collaborative analysis of 14 cohort studies. *Lancet*, *372*(9635), 293.
- 6 Neuhaus, J., Angus, B., Kowalska, J., La Rosa, A., Sampson, J., Wentworth, D., et al. (2010). Risk of all-cause mortality associated with non-fatal AIDS and serious non-AIDS events among adults infected with HIV. AIDS, 24(5), 697.
- 7 Hunt, P., Martin, J., Sinclair, E., Bredt, B., Hagos, E., Lampiris, H., et al. T cell activation is associated with lower CD4+ T cell gains in human immunodeficiency virus-infected patients with sustained viral suppression during antiretroviral therapy. *Journal of Infectious Diseases, 187*(10), 1534–43.

Health is often considered in the context of doctors' appointments, which leaves few opportunities to engage people in discussions about health-related behaviours and goals.

Dr Karalyn McDonald is a Research Fellow at the Department of Infectious Diseases, Monash University and an Honorary Fellow at the Australian Research Centre for Sex, Health and Society, La Trobe University. Dr Julian Elliott is Head of the Clinical Research at the Department of Infectious Diseases, Monash University, Head of Clinical Research at the Alfred Hospital Infectious Diseases Unit and HIV Clinical Advisor, Centre for Population Health, Burnet Institute.

⁸ Grierson, J., et al., (2009), op. cit.



Gay men and anal cancer

By Mary Poynten and Andrew Grulich

Background – human papilloma virus, anal intraepithelial neoplasia and anal cancer

Human papillomavirus (HPV), which predominantly spreads through direct skin to skin contact, is the most common sexually transmitted infection globally. Approximately 40 types of HPV have the propensity to infect the ano-genital area. These types are classified into high risk (HR) and low risk (LR) HPV, depending on their oncogenic potential - i.e., their capacity to induce tumour formation.¹ Oncogenic high risk HPV can be detected in 80% to 90% of anal cancers^{2,3}, placing anal cancer second only to cervical cancer in the strength of its association with HPV infection. HPV16 is the most common type of HPV associated with anal cancer (85-90% of all HPV-positive cases), followed by HPV18 (less than 10%).4,5

Anal HPV infection among gay men is substantially more common than cervical HPV infection is in women. A recently published meta-analysis of the prevalence of anal HPV and related lesions in gay men found that detection of any high risk types was much higher in HIV-positive than HIV-negative men (74% and 37% respectively for any high risk type). Over one third of HIV-positive men (34%), but only around one in eight HIV-negative men (13%) had anal HPV16 detected.⁶ Even among young gay men with fewer than five lifetime sexual partners, the prevalence for any HPV types in the anal canal was 42%.⁷

It is generally accepted that, similar to the natural history of HPV in the cervix, anal high risk HPV infection has the potential to progress to high grade anal intra-epithelial neoplasia (HGAIN) and eventually to invasive cancer.⁸ Some cervical lesions regress spontaneously.⁹ However, if untreated, about 1% of pre-cancerous high grade cervical lesions will eventually progress to invasive cancer per year.¹⁰ In the anus, there is less known about the natural history of HPV infection especially concerning rates of progression and regression of HGAIN.¹¹ In the meta-analysis by Machalek et al., the pooled prevalence of HGAIN was 29% in HIV-positive men and 22% in HIV-negative men.12 There were only two longitudinal studies which allowed estimation of progression rates of anal intraepithelial neoplasia (AIN). These identified extremely high incidence rates of HGAIN of around 10% per year in HIV-positive men.¹³ Based on a comparison of data on prevalence of HGAIN and incidence of anal cancer, a progression rate of less than one in 600 per year in HIV-positive men overall (about one in 377 in more recent years), and less than one in 4000 per year in HIV-negative men was estimated.14

Epidemiology of anal cancer

Anal cancer is a relatively rare cancer in the general population. However, its incidence among men and women

continued from previous page

has been steadily increasing.^{15,16} Gay men experience rates of anal cancer of up to 20 fold higher than the general population.^{17,18} For HIV-positive gay men, the risk is further elevated. The meta-analysis by Machalek et al., reported an incidence of 22/100,000 cases per year of anal cancer among gay men with HIV in the period before 1996, increasing to 78/100,000 per year in reports published after this date.¹⁹ In a 2012 report from a cohort of HIV-positive homosexual men in North America, incidence had reached 131/100,000 per year.²⁰ These data suggest that incidence of anal cancer is increasing in HIV-positive men, despite the improved general health associated with effective HIV therapies. A linkage study of the Australian HIV and cancer registers found that anal cancer had become the most common non AIDSdefining cancer, and the third most common cancer overall among people with HIV in Australia.²¹

Prevention of anal cancer

Prevention of anal cancer can take the form of primary prevention – as vaccination against HPV; or secondary prevention – as early detection of HGAIN and anal cancer.

The quadrivalent HPV vaccine (HPV 6,11,16 and 18) has been available in school programs for girls since 2007, and for boys since 2013. It is approved for women up to 45 years. For men it is recommended only to the age of 26, as there are no male efficacy data at older ages. Though trials of HPV vaccine have shown that widespread vaccination should eventually lead to a substantial reduction in anal cancer incidence²², the vaccine is likely to be less effective in adult men already infected with HPV, who comprise the majority of gay men²³. Thus the impact of vaccination on anal cancer morbidity and mortality is not likely to be seen for decades.

Screening programs for anal cancer and its precursor lesions are potential secondary prevention measures. These programs would be similar to those for cervical cancer, with anal cytology followed by high resolution anoscopy (HRA), which is the anal equivalent of colposcopy (pap smear diagnostic procedure). Digital anorectal exam (DARE) is also an important cancer detection tool, identifying early small tumours, with correspondingly better prognoses.

Currently, there are no generally accepted guidelines on how anal cancer screening programs should be implemented and anal cancer screening only occurs in specialised clinics in a small number of countries. There are very few trained and experienced high resolution anoscopists in Australia, even in capital cities such as Sydney and Melbourne.

Treatment options for high grade anal intraepithelial neoplasia (HGAIN)

There is little evidence for the effectiveness of treatment of HGAIN to prevent anal cancer. Most commonly used approaches are therapies such as cautery, infrared coagulation, laser or cryotherapy. Other options include surgical excision, therapeutic vaccines and topical treatments such as imiquimod (an immune response modifier) and 5-flourouracil. Most of these therapies require multiple treatments and have substantial recurrence rates. A Cochrane review of interventions for AIN published in 2012 identified only one randomised study, which compared imiquimod, with placebo. No statistically significant improvement in cure rates was seen with imiquimod. The authors concluded that there was insufficient evidence to support efficacy of available interventions for AIN.24 Since then, an open label randomised controlled trial of imiquimod, topical fluorouracil and electrocautery for the treatment of AIN (both high grade and low grade) in 156 HIV-positive gay men in the Netherlands has been published. Only 13% of imiquimod, 17% of fluoruracil and 39% of electrocautery-treated patients had a complete response at four weeks. Of those who responded, 67% had recurred 72 weeks after treatment.²⁵

Because of the lack of evidence on treatment outcomes and the substantial

associated morbidity, some advocate watchful waiting of HGAIN lesions, with early treatment of anal cancer should it develop. In Australia, there is currently no consensus on the preferred approach to management of HGAIN lesions.

The Study of the Prevention of Anal Cancer (SPANC)

The Study of the Prevention of Anal Cancer (the SPANC study) is a community-based cohort study of the natural history of anal human papillomavirus infection and anal cancer precursors in HIV-positive and negative homosexual men aged 35 and older. The study, based at St Vincent's Hospital in Sydney, involves anal cancer screening visits at baseline, 6, 12, 24 and 36 months. At the five study visits participants complete detailed behavioural questionnaires and undergo anal cytology, anal HPV genotyping (37 HPV genotypes) and high resolution anoscopy (HRA) with biopsy of any visible abnormalities. Men complete two follow up questionnaires after each visit to collect details of any physical and psychological morbidity associated with the procedures.

The study aims to determine:

- Prevalence, incidence and risk factors for specific types of HPV detection
- 2. Prevalence, incidence and risk factors for histologically confirmed LGAIN and HGAIN
- 3. Type-specific rates of clearance and persistence of anal HPV infection, and HPV type association with LGAIN and HGAIN lesions
- 4. Rates and predictors of AIN progression and regression
- 5. Psychosocial/quality of life impacts and costs of anal cancer screening in homosexual men.

As of April 2013, the study has enrolled 342 men, with a median age of 49 years (range 35–79 years). Almost a third of men (98, 28.7%) are HIV-positive. Thus far, at the baseline visit, 84% of men have had at least one biopsy. Evidence of high grade disease was present in 46% of men at baseline (50% in the HIV-positive and 44% in the HIV-negative, p=0.30). HPV16 was

detected in 30% of men at baseline (32% and 29% of the HIV-positive and negative respectively, p=0.61). Among 129 men who did not have evidence of high grade disease at baseline and had been followed up for up to 24 months, the incidence of new high grade disease was 28/100 person-years. Among the 100 men with high grade disease at baseline, the rate of regression (defined as having no histological or cytological evidence of high grade disease at the subsequent visit) was very high, at 42/100 person-years. These are early data on anal lesion regression, but we believe they are essential for the development of evidencebased HGAIN treatment guidelines. Importantly, two cases of anal cancer, one peri-anal and one superficially invasive anal canal SCC, have been detected in SPANC participants.

In 2013, a collaboration of researchers, clinicians and community advocates were awarded a \$1.96 million Cancer Council NSW (CCNSW) Strategic Research Partnership Grant. The purpose of this grant is to reduce the morbidity and mortality from anal cancer. To achieve this goal, in collaboration with CCNSW, the infrastructure available for anal cancer prevention research in Australia will be expanded; the existing SPANC study will be extended to enrol 600 participants, and a platform for related studies will be created. This will provide the scope to address the uncertainties surrounding AIN/anal cancer natural history and the role of anal cancer screening among gay men and other high risk groups.

For further information about the SPANC study, or to participate, visit http://www.nchecrsurveys.unsw. edu.au/spanc/

References

- Schiffman, M., Herrero, R., Desalle R, Hildesheim, A., Wacholder, S., Rodriguez, A., et al. (2005). The carcinogenicity of human papillomavirus types reflects viral evolution. *Virology, 337*(1), 76–84.
- 2 De Vuyst, H., Clifford G., Nascimento, M., Madeleine, M., Franceschi, S. (2009). Prevalence and type distribution of human papillomavirus in carcinoma and intraepithelial neoplasia of the vulva, vagina and anus: a meta-analysis. *International*

Journal of Cancer, 124(7), 1626-36.

- 3 Hoots, B., Palefsky, J., Pimenta, J., Smith, J. (2009). Human papillomavirus type distribution in anal cancer and anal intraepithelial lesions. *International Journal* of Cancer, 124(10), 2375–83.
- 4 De Vuyst, H., et. al. (2009). op. cit.
- 5 Hoots, B., et al. (2009). op. cit.
- 6 Machalek, D., Poynten, M., Jin, F., Fairley, C., Farnsworth, A., Garland, S., et. al.(2012). Anal human papillomavirus infection, and associated neoplastic lesions in homosexual men: systematic review and meta-analysis. *Lancet Oncology*, *13*(5), 487–500.
- 7 Goldstone, S., Palefsky, J., Giuliano, A., Moreira Jr., E., Aranda, C., Jessen, H., et al. (2011). Prevalence of and risk factors for human papillomavirus (HPV) infection among HIV-seronegative men who have sex with men. *The Journal of Infectious Diseases, 203*(1), 66–74.
- 8 Darragh, T., Colgan, T., Cox, J., Heller, D., Henry, M., Luff, R., et al. (2012). The lower anogenital squamous terminology standardization project for HPV-associated lesions: background and consensus recommendations from the College of American Pathologists and the American Society for Colposcopy and Cervical Pathology. J Low Genit Tract Dis, 16(3), 205–42.
- 9 Woodman, C., Collins, S., Young, L. (2007). The natural history of cervical HPV infection: unresolved issues. *Nature reviews*, 7(1), 11–22.
- McCredie, M., Sharples, K., Paul, C., Baranyai, J., Medley, G., Jones, R. (2008). Natural history of cervical neoplasia and risk of invasive cancer in women with cervical intraepithelial neoplasia 3: a retrospective cohort study. *Lancet Oncology*, 9(5), 425–34.
- 11 Machalek, D., et al. (2012). op. cit.
- 12 ibid.
- 13 ibid.
- 14 ibid.
- 15 Robinson, D., Coupland, V., Møller, H. (2009). An analysis of temporal and generational trends in the incidence of anal and other HPV-related cancers in Southeast England. *British Journal of Cancer, 100*(3), 527–31.
- 16 Jin, F., Stein, A., Conway, E., Regan, D., Law, M., Brotherton, J., et al. (2011).

Trends in anal cancer in Australia, 1982–2005. *Vaccine, 29*(12), 2322–7.

- 17 Daling, J., Weiss, N., Hislop, T., Maden, C., Coates, R., Sherman, K., et al. (1987). Sexual practices, sexually transmitted diseases, and the incidence of anal cancer. *The New England Journal of Medicine*, 317(16): 973–7.
- 18 D'Souza, G., Wiley, D., Li, X., Chmiel, J., Margolick, J., Cranston, R., et al. (2008). Incidence and epidemiology of anal cancer in the multicenter AIDS cohort study. *J of Acquir Immune Defic Syndr, 48*(4), 491–9.
- Machalek, D., et al. (2012). op. cit.
 Silverberg, M., Lau, B., Justice, A., Engels, E., Gill, M., Goedert, J., et al. (2012). Risk of anal cancer in HIV-infected and HIVuninfected individuals in North America. *Clin Infect Dis*, *54*(7), 1026–34.
- 21 van Leeuwen, M., Vajdic, C., Middleton M., McDonald, A., Law, M., Kaldor, J., et al. (2009). Continuing declines in some but not all HIV-associated cancers in Australia after widespread use of antiretroviral therapy. *AIDS*, 23(16), 2183–90.
- 22 Palefsky, J., Giuliano, A., Goldstone, S., Moreira, E., Jr., Aranda, C., Jessen, H., et al. (2011). HPV vaccine against anal HPV infection and anal intraepithelial neoplasia. *The New England Journal of Medicine*, 365(17), 1576–85.
- 23 Machalek, D., et al. (2012). op. cit.
- 24 Macaya, A., Munos-Santos, C., Balaguer, A., Barbera, M. (2012). Interventions for anal canal intraepithelial neoplasia. *Cochrane Database of Systematic Reviews*, John Wiley and Sons, Ltd.
- 25 Richel, O., de Vries, H., van Noesel, C., Dijkgraaf, M., Prins, J. (2013). Comparison of imiquimod, topical fluorouracil, and electrocautery for the treatment of anal intraepithelial neoplasia in HIV-positive men who have sex with men: an open label, randomised controlled trial. *Lancet Oncology*, 14(4), 346–53.

Dr Mary Poynten is Senior Lecturer, HIV Epidemiology and Prevention Program at The Kirby Institute and is project leader of the SPANC study. Professor Andrew Grulich is Program Head of the HIV Epidemiology and Prevention Program at The Kirby Institute and is Principal Investigator of the SPANC study.

This will provide the scope to address the uncertainties surrounding AIN/anal cancer natural history and the role of anal cancer screening among gay men and other high risk groups.



Neurocognition and HIV By **Rebekah Puls**

Over the past 20 years, developments in combination antiretroviral therapy (ART) have been associated with great improvements in life expectancy and quality.¹ However, as people living with HIV age, managing other comorbidities has become an increasing priority, and HIV-associated cognitive impairment is one such challenge.²

Cognitive impairment is graded by severity; severe HIV-related dementia (HAD) has been less frequently observed in the past few years³ and milder forms of neurocognitive impairment are increasingly identified. Mild neurocognitive disorder is associated with some interference with daily living activities and asymptomatic neurocognitive impairment that is only able to be identified on clinical testing of neurocognitive function.⁴ Impairment in neurocognitive function has previously been linked to reduced quality of life⁵, poor compliance with ART⁶ and increased progression of disease7.

There are a number of factors that have been associated with the development of neurocognitive impairment. The first of these is age; those of more advanced years are more likely to experience some impairment of cognition.⁸ It has also been reported that those with more advanced HIV disease (especially if not on ART) are more likely to experience some degree of impaired cognitive function that has been linked to inflammation due to the virus itself.⁹

Recently, patients with current risk for cardiovascular disease and also those who have experienced past acute cardiovascular events such as congestive heart failure or myocardial infarction have been associated with worsening of neurocognitive function.¹⁰ It was suggested that neurocognitive dysfunction may emerge as a result of earlier inflammatory damage to the brain due to a combination of HIV, cardiovascular disease and age. In addition, co-infection with other chronic viral infections such as hepatitis C can significantly worsen neurocognitive function.¹¹

Although cognition generally improves on commencement of ART, it has also been suggested that different antiretroviral drugs may have differing effects on these changes. It is thought that antiretroviral therapy with better penetration into the brain and central nervous system may better suppress the virus in these compartments and therefore be associated with lower impairment of neurocognition. However, as these medications can enter the central nervous system (CNS) readily, they may also readily exert their known toxicities, therefore potentially limiting any expected benefits.

The Altair CNS sub-study

The Altair CNS sub-study was the first prospective study describing changes in cerebral function between different randomised treatment regimens over one year in HIV-infected adults starting combination antiretroviral therapy for the first time.¹² The study evaluated various common treatment regimens: quadruple NtRTIs (abacavir [ABC] plus zidovudine [ZDV]) compared to efavirenz (EFV) and ritonavir-boosted atazanavir (r/ATV) with TruvadaTM (fixed dose tenofovir/ emtricitabine [TDF/FTC]) in a randomised, open-label, clinical trial that recruited treatment-naive adult HIV-positive patients in 15 countries across Australia, Asia, Europe, North and Latin America.¹³ Eligible participants in the main study were ART-naive, with CD4+ T-cell count greater than 50 cells/µL and plasma HIV-1 RNA greater than 2,000 copies/ mL. Volunteers were excluded if they had laboratory safety values consistent with poor health, were pregnant or were positive to HLA B57*01 (i.e., not able to take ABC), or had any genotypic resistance or significant intercurrent illness. There were additional exclusions for the CNS substudy that included current or recent use of antidepressant/antipsychotic medication, current or recent alcohol or recreational drug dependence, recent head injury, established dementia, untreated early syphilis, hepatitis C virus, established chronic liver disease, cirrhosis or hepatic encephalopathy. All of these criteria have been shown to independently cause some degree of cognitive impairment.

Testing for neurocognitive impairment

A wide variety of neuropsychological tests are available to test neurocognitive impairment, most of which were first developed for other neurodegenerative disease states such as Alzheimer's disease and dementia. Assessment of cerebral function was conducted using the CogState[™] testing platform – a computerised battery of tests based on standard neuropsychological and experimental psychological tests and has been validated for use in HIVpositive people.¹⁴

The CogState[™] tests are card games, thereby minimising language and cultural limitations. Brief instructions were translated into the local language.

All participants had one practice test to reduce any learning effect. Three domains were examined: speed domains to test detection, identification, monitoring/matched learning; accuracy domains that investigated associate learning/working memory; and the executive function domain. Executive functions are higher order cognitive processes that regulate, control, and manage other cognitive processes; planning, anticipating outcomes and adapting to situations. These domains were specifically developed to identify the presence or absence of cognitive change. Data were analysed using the methodology supplied and recommended by CogState[™].

The Altair CNS sub-study was the first study to prospectively describe different changes in cerebral function testing parameters between participants randomised to different initial therapies for HIV. Greater improvements in neuronal recovery were observed for recipients of TDF/FTC plus EFV and greater improvements in neurocognitive function testing were observed for recipients of TDF/FTC plus ZDV/ ABC. However, the dynamics of such improvements are poorly understood, so we conducted research which aimed to assess the dynamics of the changes in neurocognitive function over 48 weeks. A total of 28 participants consented to participate at four study sites in Bangkok (Thailand), Alberta (Canada), London (UK) and Hong Kong (China).

Study participants were randomised to one of three first line antiretroviral treatment combinations: nine participants were randomised to EFV/ TDF/FTC, eight to r/ATV/TDF/ FTC and 11 to ABC/ZDV/TDF/ FTC.¹⁵ CogState[™] was conducted at baseline, weeks 24 and 48 to assess changes in neurocognitive function. Participants were on average 35 years, with 230 CD4+ T-cells and plasma HIV-RNA virus load of 4.6 log 10 copies/mL; 17 (60%) were Asian.

Global composite scores

Cognitive improvement among the study cohort was expressed as an overall 'global composite score'. Study results reflected improvement in study participants by week 24, which was maintained at week 48. These findings were consistent across all the randomised treatment combinations used in the study and a similar pattern of improvement had been seen in other neurocognitive research conducted by Cysique and colleagues.¹⁶ These improvements may be due in part to control of HIV viremia in the brain after commencing ART and/or partial recovery from cerebral injury in chronic HIV inflammation.

Composite speed scores

For the speed score, a reduction in score represents an increase in speed (a faster reaction time). and therefore an improved response. For the overall group, the composite speed z-scores (a system of standardised scoring) were reduced at week 24, continuing to week 48. Participants randomised to the combination of EFV/TDF/FTC showed significantly less improvement of their speed score over 48 weeks, compared to participants on the other two arms. EFV has common CNS side effects including depression,

 $continued \ overleaf$

Three domains were examined: speed domains to test detection, identification, monitoring/matched learning; accuracy domains that investigated associate learning/working memory; and the executive function domain. sleep disorders, insomnia, drowsiness, anxiety.¹⁷ A recent cohort study found increased risk of neurocognitive impairment with EFV use.¹⁸ This finding may indicate that sub-clinical neuropsychiatric effects of the ART were blunting the expected recovery from HIV-associated neurological damage when ART was commenced.

Executive function

'Executive function' describes highlevel cognitive abilities that regulate other abilities and behaviours, including the ability to monitor and change behaviour, and to anticipate and plan for future events. In our study, improvements in executive function became apparent only by week 48. Executive function may take time to recover, as it is thought that these complex processes are impaired during chronic HIV infection (resulting from widespread structural and chemical changes - known as synaptodendritic injury – to areas of the frontal cortex). There was no difference for each of the study arms.

Conclusion

The study found there were overall improvements in neurocognitive function in neurologically asymptomatic, HIV-positive patients commencing combination antiretroviral therapy for the first time. This improvement occurred predominately within the first 24 weeks and either continued to improve or stabilised to 48 weeks on study therapy. Improvements were less marked in those randomised to EFV, although the difference was only statistically meaningful in the speed domains. Therefore, the choice of initial combination antiretroviral therapy regimen may lead to temporal different effects on neurocognitive function over a 48 week period.

As people living with HIV continue to age, and quality of life for those living long and prosperous lives becomes more important, there has been a surge in attention to neurocognitive health. The observations described may assist in the design and development of future treatment and research programs assessing and monitoring changes in cerebral function over time in people living with HIV. Further work to continue to monitor neurocognitive function over longer periods of therapy is needed.

Antiretroviral drugs glossary		
TDF tenofovir		
FTC emtricitabine		
ABC abacavir		
ZDV zidovudine		
r/ATV ritonavir-boosted atazanavir		
TDF/FTC fixed dose tenofovir/emtricitabine		

References

- Antiretroviral Therapy Cohort Collaboration. (2008). Life expectancy of individuals on combination antiretroviral therapy in high-income countries: a collaborative analysis of 14 cohort studies. *Lancet, 372, 293–9.*
- Brew, B., Crowe, S., Landay, A., Cysique, L., Guillemin, G. (2009). Neurodegeneration and ageing in the HAART era. *J Neuroimmune Pharmacol*, 4(2), 163–174. DOI: 10.1007/s11481-008-9143-1
- 3 Dore G., Correll P., Li, Y., Kaldor, J., Cooper, D., Brew, B. (1999). Changes to AIDS dementia complex in the era of highly active antiretroviral therapy. *AIDS* 13(10),1249–1253.
- 4 Antinori, A., Arendt, G., Becker, J., Brew, B., Byrd, D., Cherner, M., et al. (2007). Updated research nosology for HIVassociated neurocognitive disorders. *Neurology* 69(18), 1789–99.
- 5 Tozzi, V., Balestra, P., Galgani, S., Murri, R., Bellagamba, R., Narciso, P., et al. (2003). Neurocognitive performance and quality of life in patients with HIV infection. *AIDS Res Hum Retroviruses 19*(8), 643–652.
- 6 Ettenhofer M., Hinkin, C., Castellon, S., Durvasula, R., Ullman, J., Lam, M., et al. (2009). Aging, neurocognition and medication adherence in HIV infection. *Am J Geriatr Psychiatry* 17(4), 281–290.
- 7 Tozzi, V., Balestra, P., Serraino, D., Bellagamba, R., Corpolongo, A., Piselli, P., et al. (2005). Neurocognitive impairment and survival in a cohort of HIV-infected patients treated with HAART. *AIDS Res Hum Retroviruses 21*(8), 706–13.
- Jevtovi, D., Vanovac, V., Veselinovi, M., Salemovi, D., Ranin, J., Stefanova, E. (2009). The incidence of and risk factors for HIV-associated cognitive-motor complex among patients on HAART. *Biomed Pharmacother, 63*(8), 561–565. DOI: 10.1016/j.biopha.2008.09.015

- 9 Robertson, K., Smurzynski, M., Parsons, T., Wu, K., Bosch, R., Wu, J., et al. (2007). The prevalence and incidence of neurocognitive impairment in the HAART era. *AIDS*, *21*(14), 1915–1921.
- 10 Cysique L., Moffat K., Moore, D., Lane, T., Davies, N., Carr, A., et al. (2013). HIV, vascular and aging injuries in the brain of clinically stable HIV-infected adults: A 1H MRS Study. *PLoS One*, *8*(4), e61738. DOI 10.1371/journal.pone.0061738
- Parsons, T., Tucker, K., Hall, C., Robertson, W., Eron, J., Fried M., et al. (2006). Neurocognitive functioning and HAART in HIV and hepatitis C virus coinfection. *AIDS*, *20*(12), 1591–1595.
- 12 Winston, A., Duncombe, C., Li, P.C.K., Gill, J., Kerr, S., Puls, R., et al. (2010). Does choice of combination antiretroviral therapy (cART) alter changes in cerebral function testing after 48 weeks in treatment-naive, HIV-1-infected individuals commencing cART? A randomized, controlled study. *Clin Infect Dis*, 50:920–9.
- 13 Puls, R., Srasuebkul, P., Petoumenos, K., Boesecke, C., Duncombe, C., Belloso, W., et al. (2010). Efavirenz versus boosted atazanavir or zidovudine and abacavir in antiretroviral treatment-naive, HIV-infected subjects: week 48 data from the Altair study. *Clin Infect Dis*, *51*(7), 855–64. DOI: 10.1086/656363
- 14 Cysique, L., Maruff, P., Darby, D., Brew, B. (2006). The assessment of cognitive function in advanced HIV-1 infection and AIDS dementia complex using a new computerised cognitive test battery. *Arch Clin Neuropsychol* 21(2), 185–94.
- 15 Winston, A., Puls, R., Kerr, S.J., Duncombe, C., Li, P.C.K., Gill, J.M, Taylor-Robinson, S.D., Emery, S. and Cooper, D.A. for the Altair Study Group (2012). Dynamics of cognitive change in HIV-infected individuals commencing three different initial antiretroviral regimens: a randomized, controlled study. *HIV Medicine, 13*, 245–251.
- 16 Cysique, L., Vaida, F., Lestendre, S., et al. (2009). Dynamics of cognitive change in impaired HIV-positive patients initiating antiretroviral therapy. *Neurology*, *4*, 73(5):342–8.
- 17 Bristol-Myers Squibb Sustiva Product information. Retrieved from: http:// packageinserts.bms.com/pi/pi_sustiva.pdf
- 18 Ciccarelli, N., Fabbiani, M., Di Giambenedetto, S., Fanti, I., Baldonero, E., Bracciale, L., et al. (2011). Efavirenz associated with cognitive disorders in otherwise asymptomatic HIV-infected patients. *Neurology*, *76*(16), 1403–9. DOI: 10.1212/WNL.0b013e31821670fb

Dr Rebekah Puls is Senior Lecturer, Therapeutic and Vaccine Research Program at The Kirby Institute, The University of New South Wales, responsible for conduct of international clinical studies of therapy optimisation in HIV.



Chronic kidney disease in people with HIV: a review of recent developments in Australia By David Gracey

As quality of life and life expectancy has improved for people with HIV, noninfectious co-morbidities have become the predominant health consideration for many HIV-positive people. Chronic kidney disease (CKD) is one of the most important of these considerations.¹ Because antiretroviral therapies have the potential to be nephrotoxic (have a poisonous effect on the kidneys), it is particularly important for doctors to screen their HIV-positive patients for kidney disease.²

Uncontrolled HIV infection itself is associated with a variety of kidney diseases; the most widely recognised is HIV-associated nephropathy (HIVAN). HIVAN is not common in Australia, as it is seen mainly in African-American patients.³ Despite combination antiretroviral therapy (cART) directly contributing to a reduction in kidney disease, the incidence of CKD is increasing among people with HIV.⁴ The increase in the incidence of kidney disease among HIV-positive people relates to increases in life expectancy (and consequently older age) due to cART, as well as other metabolic health conditions including hypertension, diabetes and dyslipidaemia (increased levels of cholesterol and/or fat in the blood).⁵ Antiretroviral medications can themselves be nephrotoxic, or may contribute to the adverse metabolic profile of HIV-positive patients. Leading causes of chronic kidney disease among HIV-positive people compared to HIV-negative people is shown in Table 1.

Overseas, the numbers of HIV-positive people developing end-stage renal failure (ESRF) and requiring dialysis or renal transplantation are increasing.⁶ In the US the proportion of patients with ESRF and who have HIV has doubled in the last ten years. In Australia, the number of HIV-positive people with ESRF is unknown, however, in a recent study 6% of patients had an estimated glomerular filtration rate (eGFR – a blood test that measures kidney function) of <60ml/min, and 10% demonstrated significant proteinuria (protein in urine; significant proteinuria is a potential sign of kidney damage).⁷ Previous studies have reported that up to a third of HIV-positive patients had abnormal kidney function.⁸ Despite the increased prevalence of abnormal renal function in this patient group, only a minority of patients are recognised as having kidney disease. This is important, as CKD is associated with poorer outcomes and may be preventable, if recognised early.⁹

In Australia, there has been increasing interest in the area of kidney disease among HIV-positive people. Current practices in general practice for the screening and management of kidney disease in patients with HIV were examined in a national study.¹⁰ This study identified gaps in current screening practices, with only 75% of patients assessed with renal function

continued from previous page

testing in the last year, and 30% of patients screened for proteinuria. Risk factors for kidney disease were common. As well, Australian guidelines for the suitability of HIV-positive patients to undergo kidney transplantation have recently been published.¹¹

Screening for chronic kidney disease in HIV-positive patients

Early detection of kidney disease is important to enable prevention or slow progression of impaired renal function. Most guidelines recommend screening with a blood test for the eGFR and with a urine test for proteinuria, either with a urinary dipstick test or a protein: creatinine ratio (PCR).^{12,13}

The recommended frequency of testing is at least annually, with more frequent testing in patients at high risk of kidney disease, particularly those with hypertension, diabetes or those taking potentially nephrotoxic antiretroviral therapies.

Measuring renal function

Estimation of renal function is commonly undertaken by measuring the serum creatinine, which is then used to estimate a patient's renal function by using a formula to adjust for the patient's age and gender.¹⁴ This is done automatically by the laboratory and reported as the eGFR. Creatinine is an indirect measure of renal function and is a waste product of muscle breakdown. It may be influenced by many variables including ethnicity, age, weight and gender. In HIV-positive patients, measurement of renal function using the serum creatinine may be particularly problematic because of abnormal metabolism, altered body mass, as well as exposure to medications which may alter the body's handling of creatinine. Chronic kidney disease is present when the eGFR is measured on two occasions at least three months apart and is <60ml/min. A sustained reduction in eGFR is also significant, even if the absolute level remains above 60ml/min.¹⁵ The clinical classification of chronic kidney disease is shown in Table 2.16 Referral to a kidney specialist is recommended once

 Table 1: Common causes of kidney disease in the HIV-negative and HIV-positive patients (adapted from ^{18,19,20}).

HIV-negative patients	HIV-positive patients
Diabetes	Diabetes
Hypertension	Hypertension
Glomerulonephritis	Medications (antiretrovirals and others)
Genetic	HIV-specific
Other	Other: HIV-related (HCV, HBV co-infection etc.)
	Other: Non-HIV related

Table 2: The stages of chronic kidney disease (CKD). CKD is defined as either kidney damage or GFR<60ml/min for at least three months. Kidney damage is defined as pathological abnormalities or markers of damage, including abnormal blood or urine tests, or imaging studies.²¹

Stage	Description	eGFR
1	Kidney damage with normal eGFR	>90
2	Kidney damage with mildly reduced eGFR	60–89
3	Moderate reduction in eGFR	30–59
4	Severe reduction in eGFR	15–29
5	Kidney failure	<15 (or dialysis)

Table 3: Renal Risk Factors amongst the HIV-positive patient cohort. Many of these risk factors may be modifiable. Those patients at high risk of kidney disease should be screened more frequently for renal abnormalities (adapted from ^{22,23,24}).

Modifiable renal risk factors	Non-modifiable renal risk factors
Diabetes	Increasing age
Hypertension	Gender
Obesity	Family history
Dyslipidaemia	Ethnicity
Cigarette smoking	
HIV-specific (viral load, CD4 count)	
Hepatitis co-infection	
Nephrotoxic medications	
Other: illicit drugs, protein supplements	

the eGFR drops below 60ml/min, or if there has been a sustained reduction in renal function, particularly in the presence of proteinuria or haematuria.¹⁷

Measuring proteinuria

Proteinuria may be one of the earliest signs of kidney disease and the level of proteinuria is prognostic of progression to ESRF in the general population. Screening for proteinuria may be undertaken using a albuminspecific dipstick test or a spot urinary protein:creatinine ratio. The dipstick test may miss some low-level cases. As well, the uPCR is generally more convenient and provides numerical quantification of the degree of proteinuria that is present.²⁵

Screening in high-risk patients

Screening for renal disease should be more intensive in those patients at particular risk of renal disease.²⁶ Risk factors for renal disease in HIVpositive patients are shown in Table 3. Some of these risk factors may be modifiable to try to reduce a patient's risk of developing disease, particularly metabolic risks such as obesity, diabetes, hypertension or cigarette smoking. There is a preponderance of renal risk factors observed among people with HIV, and a majority are at increased risk of renal disease.²⁷

Antiretroviral renal effects

Antiretroviral medications may have specific renal effects, and some may

be nephrotoxic.²⁸ Screening for these potential side effects is important, although they are uncommon. A recent report suggests that the commonest reason for referral of an HIV-positive patient to a kidney specialist was because of concerns about nephrotoxicity relating to the patient's cART.²⁹ There are many antiretroviral agents with reported nephrotoxic effects. The nucleotide reverse-transcriptase inhibitor tenofovir disoproxil fumarate (TDF) is a highly effective first-line antiretroviral agent with reported renal side effects, although these are uncommonly seen. For patients initiated on TDF, more frequent screening of renal parameters is recommended, including the serum phosphate, to try and detect renal tubular toxicity early. There are reports of association with renal toxicity with many other antiretroviral agents, including the protease inhibitors atazanavir and ritonavir. Overall, these potential renal side effects are uncommon and should be detected early, if the recommended screening practices are followed.

Management of renal disease in people with HIV

Stringent attention to renal risk factors and a reduction of the prevalence of renal disease in people with HIV can reduce associated morbidity and mortality.³⁰ However, it is likely that the prevalence of kidney disease will continue to increase in this patient group, because of the prolonged survival and the increasing rates of hypertension and diabetes observed. Management of renal risk factors may prevent progression of established renal disease. Such approaches include aggressive blood pressure control with anti-hypertensives (with preferential use of ACE-inhibitors or angiotensin receptor blockers, if proteinuric), treatment of dyslipidaemia with lipid lowering medications, strict diabetic control, weight loss, exercise and smoking cessation.

Specific evaluation of some of these treatment strategies has not been undertaken among people with HIV and their benefit is extrapolated from studies undertaken in the HIV-

negative cohort. Additionally, dialysis and transplantation may be used in HIV-positive patients with advanced renal disease although, because of the inferior outcomes compared to the HIV-negative population, the focus remains on early detection and prevention of kidney disease in HIVpositive people, wherever possible.^{31,32}

References

- Phair, J., Palella, F. (2011). Renal disease 1 in HIV-infected individuals. Curr Opin HIV AIDS, 6(4), 285-289.
- 2 Hall, A., Hendry, B., Nitsch, D., Connolly, J. (2011). Tenofovir-associated kidney toxicity in HIV-infected patients: A review of the evidence. Am J Kidney Dis, 57(5), 773-780.
- З Phair, J., et al. (2011). op. cit.
- Δ Adih, W., Selik, R., Hu, X. (2011). Trends in diseases reported on US Death Certificates that mentioned HIV infection, 1996–2006. J Int Assoc Physicians AIDS Care, 10(1), 5-11.
- Post, F., Holt, S. (2009). Recent developments in HIV and the kidney. Curr Opin Infect Dis, 9, 43-48.
- Wyatt, C., Murphy, B. (2005). Kidney 6 Transplantation in HIV-infected patients. Seminars in Dial, 18(6), 495-498.
- 7 Gracey, D., Chan, D., Bailey, M., Richards, D., Dalton, B. (2013). Screening and management of renal disease in human immunodeficiency virus-infected patients in Australia. Int Medicine J, 43(4), 410-416.
- 8 Gupta, S., Mamlin, B., Johnson, C., Dollins, M., Topf, J., Dubé, M. (2004). Prevalence of proteinuria and the development of chronic kidney disease in HIV-infected patients. Clin Nephrol, 61, 1 - 6.
- Estrella, M., Fine D. (2010). Screening for chronic kidney disease in HIV-infected patients. Adv Chronic Kidney Dis, 17(1):26-41.
- Gupta S., Mamlin B., et al., (2004). op. cit. 10
- 11 Campbell, S., Pilmore, H, Gracey, D., Mulley, W., Russell, C., McTaggart, S.

(2013). KHA-CARI Guideline: Recipient Assessment for Transplantation. Nephrology, 18(6), 455-462.

- 12 Gupta, S., Eustace, J., Winston, J., Boydstun, I., Ahuja, T., Rodriguez, R., et al. (2005). Guidelines for the management of chronic kidney disease in HIV-infected patients: recommendations of the HIV Medicine Association of the Infectious Diseases Society of America. Clin Infect Dis, 40(11), 1559-85.
- 13 European AIDS Clinical Society (EACS). Guidelines: clinical management and treatment of HIV infected adults in Europe, Version 6, 2011, Retrieved from: http://www.europeanaidsclinicalsociety. org/images/stories/EACS-Pdf/ EACSGuidelinesS-v6.OS-English.pdf
- 14 Estrella, M., et al. (2010), op. cit.
- 15 Phair, J., et al. (2011), op. cit.
- 16 National Kidney Foundation. (2002). K/DOQI Clinical practice guidelines for chronic kidney disease: evaluation, classification and stratification. Am J Kidney Dis, 39: S1-S266 (suppl 1).
- 17 Estrella, M., Fine, D.,(2010), op. cit.
- 18 Phair, J., et al. (2011). op. cit.
- 19 Post, F., et al. (2009). op cit.
- 20 Gracey, D., Chan, D., Bailey, M. et al., (2013). op. cit.
- 21 Gupta, S., Eustace, J., Winston, J., et al. (2005). op. cit.
- 22 Phair, J., et al. (2011). op. cit.
- 23 Post, F., et al. (2009). op cit.
- 24 Gracey, D., et al. (2013). op. cit.
- 25 Estrella, M., Fine, D. (2010). op. cit.
- 26 Gupta S., Mamlin B., et al. (2004). op. cit.
- 27 Phair, J., et al. (2011). op. cit.
- 28 Hall, A., et al. (2011). op. cit. 29
 - ibid.
- 30 Phair, J., et al. (2011). op. cit.
- 31 ibid.
- 32 Wyatt, C., et al. (2005). op. cit.

Dr David Gracey is a Senior Staff Specialist, Renal and Renal Transplant Physician at Royal Prince Alfred Hospital, Sydney and a Clinical Senior Lecturer at the Faculty of Medicine, Central Clinical School, University of Sydney.

Stringent attention to renal risk factors and a reduction of the prevalence of renal disease in people with HIV can reduce associated morbidity and mortality. However, it is likely that the prevalence of kidney disease will continue to increase in this patient group, because of the prolonged survival and the increasing rates of hypertension and diabetes observed.



REGIONAL FEATURE Kapul Champions: a proud new voice in Papua New Guinea

By Matthew Tyne

'MSM [men who have sex with men] and TG [transgender people] are better positioned than anyone else to say what their HIV-related needs might be. We need an organisation for MSM and TG, run by MSM and TG. A national voice requires a strong national organisation. The MSM and TG community has established Kapul¹ Champions as its representative voice.'

— Don Liriope, Kapul Champions Vice-President. It is November 30, 2012, World AIDS Day eve. It is five minutes before the program is scheduled to start, yet many of the invited guests have not turned up. The tables are laden with food and drink. There is red ribbon and bunting everywhere. There are many colourful activities in Port Moresby and across the country every World AIDS Day. Communities and agencies make massive efforts to engage the broader public about HIV and to remember their friends, family and colleagues, who have died because of AIDS. The last of the guests are seated and the program begins.

Today is an important day in the national HIV response in Papua New Guinea. It marks the official launching of Kapul Champions, the country's first and only national organisation for men who have sex with men (MSM) and transgender people (TG). Members of Kapul Champions have come from different parts of the country to attend the launching. They are joined by members of other affected communities and supporters. The PNG Minister for Health and HIV, The Hon Michael Malabag, who has the pleasure of launching Kapul Champions is greeted by two members of the local transgender community, who present him with a copy of the newly minted Kapul Champions Constitution. There is loud applause and cheers from the Kapul Champions members as the Minister officially acknowledges the existence of the new organisation and its important role as an advocate for the interests of the country's diverse communities of MSM and TG.

Kapul Champions was established by local men who have sex with men and transgender community members to represent the interests of these communities across the country to better contribute to the national HIV response. The organisation is the result of eighteen months of community consultations (between mid-2010 and the late 2011), stakeholder discussions and skills development workshops for small groups of MSM and TG.

The Leadership Development Group (LDG), the precursor to Kapul Champions, identified that the initial need was to build leadership capacity among a small group of people rather than try to establish a larger representative structure immediately. Without support from the broader community of MSM and TG across the country, any self-proclaimed representative organisation would be certain to fail.

The LDG was a project of the Poro Sapot Program (Save the Children PNG) with AFAO and Queensland Association of Healthy Communities providing technical support. In 2010, at community consultations in Port Moresby and Lae, the community members present identified issues about the place of MSM and TG in PNG society and their involvement in the country's HIV response. These included the continued criminalisation of sex between men; religious attitudes towards MSM and TG; a lack of research on specific practices and cultures; lack of strong existing formal MSM/TG networks; violence by police and family members; alcohol abuse among MSM and TG and coercive sex.

In addition to identifying issues, the consultations, which included over 100 MSM and TG community members, called for the formation of a national organisation, while acknowledging the existence of informal networks across the country. These informal networks provide social support, as many men and TG remain silent about their sexuality to their families and communities because they fear rejection or worse.

The LDG, together with MSM and TG community members, prioritised the issues and began to plan how to address these. The focus of the work became taking steps towards a national organisation; advocating for law reform and; improving the HIV-related and health knowledge of MSM and TG. Through a series of workshops on



Pictured (L–R): The Hon Michael Malabag, MP, PNG Minister for Health and HIV/AIDS; Ian Ako (aka Del-Rosa Network); Morea Sine, (aka Molina Jones); and David McLachlan-Karr, UN Resident Coordinator and UNDP Resident Representative.

advocacy, community mobilisation and leadership skills, members of the MSM and TG community were able to articulate their needs and their very existence within PNG society through participation in the National Dialogue on HIV, Human Rights and the Law held at the nation's Parliament House in June 2011. The report of the Dialogue was launched at the same time as Kapul Champions.

The LDG achieved much in its 18 months. It established and strengthened links between various MSM and TG communities, developed skills of a key leadership group and began to advocate on law reform and improving access to health services. As the LDG project came to a close, its final activity in December 2011, saw the election of a Board for a new national MSM and TG organisation: Kapul Champions. The Board members come from the eight regions of the country. The organisation now has a small secretariat, supported by Igat Hope, the national network of PLHIV organisations. Since its inception, Kapul Champions has created policies; strengthened relationships with partners and is

developing sexual health information for MSM and TG. Given the high levels of stigma and discrimination experienced by MSM and TG in PNG, the organisation's work occurs in the context of ongoing environmental risk. Despite the risks, Kapul Champions members continue to advocate and to improve the participation of MSM and TG in the nations HIV response. These courageous people deserve our continued support to strengthen and flourish.

HIV Australia looks forward to receiving an update from the members of Kapul Champions about the organisation's progress later this year.

Matthew Tyne is International Program Officer at AFAO.



BOOK REVIEW: HIV PREVENTION AND BISEXUAL REALITIES Viviane Namaste, et al. (2012). University of Toronto Press.

A colleague in the HIV sector once observed that, 'gay men tend to assume that all bisexual men are really gay, whereas lesbians tend to assume that bisexual women are really straight'. I was reminded of this remark while reading this book from a group of Canadian researchers, *HIV prevention and bisexual realities*.

Viviane Namaste and her team question the lack of HIV prevention and education measures targeted toward bisexuals. In Canada, they maintain, there are simply none. In terms of politics and society, Canada and Australia have much in common. This is also true – to some extent – of the HIV epidemics the two countries have experienced. Both have low level epidemics in which transmission is concentrated among gay men, though this is less the case in Canada, which has a higher proportion of infections among immigrants (due to its more liberal immigration policies) and among injecting drug users (due to its slower adoption of harm reduction measures).

Namaste and her team cite research which shows that bisexual people are at higher risk of acquiring HIV and other sexually transmissible infections (STIs). Whether this is the case in Australia I don't know and am inclined to doubt, though I doubt whether such data is available here. However, the experiences described by bisexual people who the researchers interviewed and their accounts of attitudes towards bisexuals sound remarkably familiar. This alone makes the critique of institutional attitudes toward bisexual people and their sexual health needs relevant to the Australian context.

The authors are extremely critical of the disciplines of epidemiology and public health, and also of government and community-based HIV responses, for their failure to respond adequately - or even to identify - the needs of people who have sex with both women and men. The authors encountered considerable barriers in getting their research funded, a fact which they attribute to institutionalised bias against bisexuals. The needs of bisexual people, they argue, are minimised or simply ignored in the response to HIV and sexual health promotion more generally.

This erasure of bisexual people continues despite the level of HIV risk that bisexual men at least, face. 'HIV policy neglects bisexual realities,' the authors argue, and 'it (ironically) does so at the precise moment bisexual men are scapegoated as vectors of transmission for heterosexual women' (p. 199). The invention of the term 'men who have sex with men' was, as the authors point out (p. 24), intended to recognise the experience of those men who have sex with other men but do not identify as gay. Indeed, it is these men who were, in the early days of the HIV epidemic, identified as the likely locus of transmission of the virus from the gay male community into the 'general', heterosexual community. The term 'men who have sex with men' (or MSM) was in turn criticised by gay men, who argued - quite rightly - that it failed to recognise their specific culture and experiences. This led to one of the sillier tautologies that the HIV epidemic has produced: 'gay men and MSM', which is still in common use, at least in HIV circles.

However, as the authors point out, while HIV prevention measures that target gay men and MSM are supposed to target both gay and bisexual men, they only reach gay men (p. 102). Namaste and her colleagues are highly critical of the assumption – explicit in

HIV Prevention and Bisexual Realities



some quarters – that bisexual people can access HIV education targeted toward either gay men or heterosexual people (p. 124). In fact, as the respondents in their research clearly indicate, the result is that bisexual people access neither.

The authors are equally critical of the erasure of bisexual women in HIV work, noting that there are virtually no education materials available for women who have sex with women. This book is the first that I have seen to address the glaring contradiction between the safe sex messages given to lesbians - that is, to use dental dams for oral sex - and the fact that virtually nobody actually does so (p. 139). The authors also point out the importance of incorporating HIV prevention messages into women's sexual and reproductive health needs more generally: contraception is not just about using a condom, and nor is sexual health.

While the authors' critique of the erasure of bisexual people in HIV prevention and services is compelling, their analysis of the distinction between identity and behaviour is less well developed. As the authors readily acknowledge, just as many men who have sex with men do not identify as 'gay', many people who have sex with both women and men do not necessarily identify as 'bisexual'. However, they themselves slide between the terms 'bisexual' and 'people who have sex with both men and women'.

The text can also be irritatingly repetitive in places – for example, the observations about swinger culture are very interesting, but I became distinctly less sympathetic after the tenth reading.

Nonetheless, the authors' project appears successful, as they go beyond social research to develop their own sexual health campaign for bisexual people. The campaign appears to have been very successful, with large numbers of phone calls and website hits being received (p. 197). Unfortunately, the authors do not provide an analysis of just who the campaign reached, which would be interesting to compare with its objectives.

The real strength of this work is its accessibility. Namaste and her colleagues not only criticise the complex jargon of public health and HIV, but walk the walk themselves. They explain epidemiological terms such as 'incidence' and 'prevalence' in everyday terms. They also detail institutional relationships, and the way epidemiology informs research, public health policy and the funding of services. For readers who do not work in HIV (and even those who do), such explanation is incredibly useful. It is worth being reminded, as the authors do, that not everybody knows what 'STI' stands for, or what 'seropositive' means.

Overall, for anyone who has noticed the glaring failure of HIV services to genuinely address the needs of bisexual people, 'HIV prevention and bisexual realities' is an excellent place from which to start.

Reviewed by Dr Abigail Groves, a freelance writer and a former policy analyst at AFAO.



TREATMENT BRIEFS

HERPES VIRUSES ASSOCIATED WITH SHEDDING OF HIV IN THE SEMEN OF GAY MEN TAKING ANTIRETROVIRAL THERAPY

ow level HIV replication in semen persists in almost 10% of gay men taking antiretroviral therapy, investigators from the United States report in the online edition of *Clinical Infectious Diseases*. A low-level viral load in the blood and shedding of cytomegalovirus (CMV) and Epstein Barr virus (EBV) in semen were associated with the detection of HIV in the genital tract.

'Low levels of HIV in blood plasma between 50 and 500 copies/ml were associated with seminal shedding, suggesting that a complete suppression of HIV blood levels may minimise the risk of sexual transmission,' the researchers comment.

Antiretroviral therapy (ART) suppresses HIV replication in the blood and semen of most HIV-positive men, substantially reducing the risk of sexual transmission; however, genital shedding of HIV can still occur in the presence of antiretroviral therapy. There have also been rare case reports of HIV transmissions in the presence of therapy that is suppressing viral load in blood plasma.

Untreated sexually transmitted infections (STIs) can cause local inflammation, possibly increasing the risk of transmission. Research involving people who have not taken HIV treatment (who are antiretroviral naive) has also shown that some human herpes viruses including CMV and EBV can cause immune activation or increase viral load in semen. Investigators from California therefore designed a study exploring the relationship between STIs, seven herpes viruses and shedding of HIV in semen. Their study sample comprised 114 gay and other men who have sex with men (MSM), all of whom were taking

antiretroviral therapy with a blood plasma viral load below 500 copies/ ml. An asymptomatic bacterial STI was detected in 15% of individuals, including 4% with a urethral infection.

HIV was detected in the semen of 10% of participants. The median genital tract viral load in these people was 126 copies/ml. A herpes virus was detected in the semen of 63% of participants. CMV was detected in the genital tract of 49% of participants and EBV in the semen of 31% of individuals.

There was no relationship between genital shedding of HIV and type of antiretroviral therapy, duration of treatment or self-reported adherence.

Surprisingly, the presence of a urethral STI did not increase the risk of shedding HIV in semen. 'This may be a consequence of the relatively low prevalence of urethral STIs in this asymptomatic cohort,' suggest the authors. 'However, this also suggests that CMV may be a more common precipitant of HIV shedding in semen than bacterial STI during ART.'

They conclude, 'the association between isolated HIV shedding and high-level CMV replication and EBV replication in the genital tract suggests that the presence of these viruses could play a role in HIV transmission ... these findings have important implications for the development of strategies to reduce HIV transmission.'

Reference

Gianella, S., et al. (2013). Shedding of HIV and human herpes viruses in the semen of effectively treated HIV-1 infected men who have sex with men. *Clin Infect Dis*, online edition, 2013. DOI: 10.1093/cid/cit252

> Michael Carter Adapted from www.aidsmap.com Published: 9 May 2013

TRIAL DISCONTINUED: VACCINE DID NOT PREVENT HIV INFECTION NOR REDUCE VIRAL LOAD

n 25 April, the US National Institute of Allergy and Infectious Diseases (NIAID) announced that it was discontinuing the HVTN 505 HIV vaccine trial. HVTN 505, a randomised, placebocontrolled phase IIb trial which started in July 2009, involved 2,504 gay and transgender volunteers in 19 US cities. HVTN 505 was the only ongoing HIV vaccine trial large enough to be a true test of vaccine efficacy.

NIAID stopped administering injections when the trial's independent data and safety monitoring board (DSMB) found during a scheduled interim review that there was no sign that the vaccine regimen was preventing HIV infection, nor any sign that it was reducing viral load among vaccine recipients who had acquired HIV during the trial.

The DSMB found that there were actually more HIV infections in volunteers receiving vaccine than placebo, but it is important to emphasise that this difference was not statistically significant and may have been due to chance. Statistically speaking, the vaccine had zero efficacy.

The HVTN 505 study was testing an investigational 'prime-boost' vaccine regimen developed by NIAID's Vaccine Research Center. It involved a series of three injections. The first two, at the start of the study and four weeks later, consisted of a length of DNA – artificial genetic material – that 'coded' for proteins found on the surface and inside the HIV virus. The idea was to sensitise the immune system to the specific HIV genetic sequences.

In its April 22 interim review, the DSMB looked at volunteers who were diagnosed with HIV infection after having been in the study a minimum of 28 weeks and found that 27 HIV infections had occurred among the vaccine recipients and 21 among placebo vaccine recipients. Additionally, the DSMB found that viral load among the 30 volunteers who acquired HIV at least 28 weeks after entering the study, and who had been followed for at least 20 weeks after diagnosis, was no lower in vaccine than in placebo recipients. Study volunteers are being asked to report to their specific clinic sites over the next few weeks to find out whether they received the investigational vaccines or placebo. The HVTN 505

study will continue follow-up with study participants to further evaluate the trial data.

> Gus Cairns Adapted from www.aidsmap.com Published: 26 April 2013

PREP DOESN'T LEAD TO INCREASES IN RISKY SEX AMONG GAY MEN

aking HIV pre-exposure prophylaxis (PrEP) does not lead to increased levels of sexual risk behaviour among gay men, investigators from the United States report in the online edition of the *Journal of Acquired Immune Deficiency Syndromes*. Numbers of sexual partners fell, as did the proportion of men reporting unprotected anal sex.

'We found no evidence of risk compensation among at-risk MSM [men who have sex with men] initiating PrEP,' comment the authors. 'Mean numbers of partners and the proportion of men reporting UAS [unprotected anal sex] decreased significantly from baseline during 24 months of follow-up.'

PrEP is an emerging HIV prevention technology. It involves HIV-negative individuals taking daily antiretroviral therapy to reduce their risk of infection with the virus. In 2010, results of the iPrEx trial involving gay and other MSM showed that daily PrEP with Truvada (FTC and tenofovir) reduced the risk of infection with HIV by 44% overall, with high efficacy seen in people with the best treatment adherence. Although the results of PrEP studies involving heterosexuals have been mixed, the United States Food and Drug Administration approved TruvadaTM for use as PrEP by adults with a high risk of HIV infection. However, there is concern in some quarters that use of PrEP may lead to increases in sexual risk behaviour. Mathematical models suggest that even modest increases in the proportion of gay men reporting unprotected sex could wipe out the beneficial effect of PrEP at a community level. However, the precise impact of PrEP on sexual risk taking is highly controversial.

Data gathered during a PrEP safety study allowed investigators to explore the impact of PrEP on the sexual risk behaviour of HIV-negative gay men with a high risk of infection with HIV.

A total of 400 men were recruited to the study between 2005 and 2007. All reported anal sex with another man in the preceding twelve months. The study was double blind and placebo controlled. Participants were randomised either to start treatment immediately or to wait for nine months. The men were interviewed at baseline and then every three months about their sexual risk behaviour and use of recreational and erectile dysfunction drugs. The study lasted 24 months.

Participation in the study did not lead to an increase in the number of reported episodes of unprotected anal sex, which remained steady between months 3 and 9 and months 12 and 24 in both the immediate and delayedtreatment arms.

'These changes may represent a possible increase in seroadaptive practices, in which men preferentially have more episodes of UAS with assumed HIVnegative partners,' comment the authors.

They also note 'men in this study received risk-reduction counselling, condoms and lubricants, regular HIV/ STI testing, and linkage to prevention services ... which may explain the observed risk reduction and could explain the observed risk declines and could mitigate any potential for risk compensation.'

Despite this, the investigators were encouraged by their results, which they believe 'provide important information on changes in risk practices among MSM in the US initiating PrEP in a clinical trial setting'.

Reference

Liu, A., et al. (2013). Sexual risk behavior among HIV-uninfected men who have sex with men (MSM) participating in a tenofovir pre-exposure prophylaxis randomized trial in the United States. *J Acquir Immune Defic Syndr*, online edition. DOI: 10.1097/ QAI.0b013e31828fo97a

> Michael Carter Adapted from www.aidsmap.com Published: 15 April 2013

Subscribe to HIV Australia

If you're not already receiving a copy of *HIV Australia* but would like to, please complete your details below and return to *HIV Australia*, PO Box 51, Newtown NSW 2042 Australia or fax to (+61 2) 9557 9867

Name
Organisation
Address
Country
Email
Telephone

July

30 June–3 July

7th IAS Conference on HIV pathogenesis, treatment and prevention (IAS 2013) Kuala Lumpur, Malaysia http://www.ias2013.org

7–10

Social Sciences and Humanities in HIV conference Paris, France http://www.asshhconference.org

29

5th Spotlight on Chronic Hepatitis B Forum - Victorian Hepatitis B Alliance

Melbourne, Australia http://www.gpv.org.au/event.asp

September

9–10

17th Annual Chronic Diseases Network Conference 2013 Darwin, Australia http://www.cdnconference.com.au

October

4–5

8th International Workshop on HIV Transmission: Principles of Intervention Barcelona, Spain http://www.virology-education.com

9

HIV-related stigma, discrimination and human rights: revisited' – Professor Peter Aggleton, Centre for Social Research in Health (CSRH) Seminar Series

Sydney, Australia https://csrh.arts.u

https://csrh.arts.unsw.edu.au/event/featured/seminarseries/

October (continued)

7–10 AIDS Vaccine 2013 Barcelona, Spain http://www.vaccineenterprise.org/conference/2013

7–10

7th Social Aspects of HIV and AIDS Research Alliance (SAHARA) Conference 2013 (SAHARA 7) Dakar, Senegal http://www.sahara.org.za/conferences/2013

21–23

2013 Australasian HIV&AIDS Conference (25th Annual Conference of the Australasian Society for HIV Medicine)

Darwin, Australia http://www.hivaidsconference.com.au/ Future-Conferences

23-25

2013 Sexual Health Conference Darwin, Australia http://www.sexualhealthconference.com.au

30–31

4th International Workshop on HIV and Aging Baltimore, United States of America http://www.virology-education.com

November

3

'What do we think shapes sexual risk-taking in gay men? Insights from experience, research and rapidly shifting theoretical paradigms'
Professor John de Wit, Centre for Social Research in Health (CSRH) Seminar Series Sydney, Australia

https://csrh.arts.unsw.edu.au/event/featured/seminarseries/

FOR HIV AND HEALTHY LIVING

IT'S NEVER TOO EARLY TO TAKE CONTROL

For info and tips on healthy living with HIV check out:

www.yourbodyblueprint.org.au

AFAO

napwha



