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The official publication of **Body Positive Inc.** A peer support organisation for people living with HIV/AIDS

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HIV Treatments Update

Each year Body Positive hosts a one day seminar updating the community on advances and progress on HIV medicine, treatments and issues surrounding living with HIV. The latest event took place at the Pullman Hotel in Auckland on 26th August. Speakers came from a wide range of fields including medical and legal, and attending were academics, police, support workers and health professionals, as well as people living with HIV.

Professor Simon Mallal is the executive director of the Western Australian Centre for Clinical Immunology and Biomedical Statistics. He is an HIV physician and clinical immunologist based at the Royal Perth Hospital. His team in partnership with Murdoch University has been credited with several key advances in HIV medicine.

The focus of his presentation was centred around when is the best time to start treatment based on CD4 counts. In New Zealand at present, treatment is not usually offered to those with a CD4 count above 350 per ml of blood. Overseas, especially in the United States, there is a shift towards commencing treatment when a patient's CD4 levels drop to 500. However, the long term benefit of such an approach is not yet clear.

A case is made that those starting treatments earlier have their viral loads reduced to an undetectable level and are therefore far less likely to pass on HIV to new partners. This has become known as "Treatment as Prevention". However, questions have been raised about the long term effects of the toxicity of the treatments versus the continual low grade inflammation of the immune system as it continually fights HIV if that patient was not on treatments, ie those whose immune systems are continually working overtime. In essence, the current generation are guinea pigs for future generations.

Simon gave a good account of the evolution of HIV treatment in Australia, New Zealand and overseas. His evening presentation was designed for other medics and described a clear preference for individualised treatment, an earlier start to medicines in order to reduce the chance of the newly diagnosed patient passing HIV on to their partners. He challenged the international recommended treatment guidelines. He did however, reiterate that in his opinion, Australia and New Zealand have performed well in comparison to other countries in handling the HIV/AIDS issue since 1980 due to their political bipartisan approach, a politically active patient group and broad community support for the measures to be taken.

The next speaker was **associate professor Mark Thomas**. He is an infectious disease physician at Auckland Hospital specialising in adult patients with HIV and AIDS. His presentation on HIV in New Zealand concentrated on the next 20 years and on HIV treatments looking up to 10 years hence. He predicted that New Zealand is at serious risk of experiencing an exploding rate of new HIV transmissions if the focus is lost on encouraging condom use and needle exchange programmes. Despite the best efforts of the New Zealand AIDS Foundation (NZAF) to curtail transmission he foresees significant increases in infection amongst men who have sex with men (MSM).

Carissa Sutherland is a masters student in Health Psychology at Auckland University. She has worked under the supervision of Professor Keith Petrie and Dr. Mark Thomas. Her research has looked at the effect of internet and social media on interactions between people with HIV infections and Auckland Hospital's Infectious Disease Service.

Her research has thrown up interesting data on how few patients use the internet to access information on HIV treatments and how few challenge their physician or pose questions regarding their treatment. New Zealanders appear tame compared with their American and Australian counterparts who participate far more in the decision making regarding their treatment.

Associate professor Nigel Dickson is Director of the AIDS Epidemiology Group in the department of preventative and social medicine at the University of Otago. He has researched sexual behaviour and reproductive health since 1990 and is the co-director of the New Zealand pediatric surveillance unit at the department of women's and children's health since 1997.

Associate Professor Mark Thomas

He updated the meeting on New Zealand epidemiology statistics up to 2010. He highlighted the fact that despite all the campaigns and publicity surrounding HIV, 2010 was the year with the highest ever infection rates for HIV for MSM. He reaffirmed the need for New Zealand to step up testing campaigns, arguing that knowing one's status may change people's behaviour.

Nigel discussed statistics showing New Zealand's performance against other western nations. When addressing MSM new infections, all age groups appear to be on the rise, especially those over 45. The only group with lower infection rates than previous years was that of the under 30s. This group however, remained the second highest group overall behind those aged 40-49.

Tony Hughes is the director of the NZAF research unit. His presentation highlighted the need to maintain condom use as the best method to prevent HIV transmission. He argued that using a "treatment as prevention" approach was counter-productive as people perceived those with undetectable viral loads as virtually non-infectious. He used Australian models to demonstrate that the most consistent method of prevention is sustained condom use.

Tony's presentation showed that receptive anal sex is 18-20 times more risky than vaginal sex. He was concerned that arguments in favour of treatment as prevention sends the wrong message to the MSM community who should be encouraged to maintain or improve condom usage.

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Detective sergeant Andy King has worked with the New Zealand Police Force since 1995. He established the Auckland Adult Sexual Assault Team (ASAT) in 2006. His presentation was a rendition of the notorious Glen Mills case from the police viewpoint.

Mills was charged with multiple cases of infecting with disease, wounding with reckless disregard, sexual violation and crime committed on the high seas. It was held that after testing positive for HIV in 2007 Mills deliberately infected 11 men and three women through engaging in unprotected sex. In 2009 Mills took his own life whilst awaiting trial in Mount Eden prison. Further claims of gang rape have arisen since. The crux of the case was that Mills had put others at risk of contracting HIV by neither using a condom during sex nor disclosing his HIV status.

Dr Steve Richie is a post doctoral research fellow at the Allan Wilson Centre as well as an infectious disease physician at Auckland Hospital. Steve recently attended the 6th International AIDS Society (IAS) conference on pathogenesis, treatment and prevention in Rome. His presentation was an update on current topical developments in vaccines and microbicides.

It was reported at the conference that there is no expectation of a cure for HIV in the foreseeable future. Current research is looking at treatment as prevention. Studies in Brazil indicated that those uninfected with HIV but engaging in unprotected sex whilst effectively taking HIV medicines were 92% less likely to test positive than those who took placebos. It was also reported that current research is based on investigating different cocktails of drugs rather than discovering any new ones.

Professor Paul Rishworth of the Auckland Faculty of Law is an expert on human rights in New Zealand and the South Pacific. He worked on the New Zealand Bill of Rights and in 2004 wrote a legal opinion about the duty of care under the Crimes Acts for people living with HIV. His presentation posed the question "HIV today in 2011 is no longer a terminal condition. Does it still have the seriousness of a potential criminal conviction?"

Paul's current research suggests that those who are HIV positive but do not disclose their status but do use a condom during sex are not criminally liable. Further he suggests that those who are HIV positive, who do disclose their status and then do not use a condom are also not criminally liable. He cited recent Canadian court judgements which range from a dismissal for an HIV man on medicines who was held to pose no significant risk, to other cases where charges were held. He summarised, "there is confusion in Canada".

Professor Rishworth will announce his final legal opinion to Body Positive before Christmas.

Jane Bruning is the national coordinator of Positive Women. As such Jane is committed to ensuring the voices of women and families living with HIV in New Zealand are heard. Her presentation included a practical demonstration of the female condom. She admits herself that some of the male attendees were less than enthusiastic participants in the exercise. The condom used was the Mk 2 model. The earlier Mk 1 model has been criticised as being too squeaky. However, both condoms are also effective for anal use as for vaginal.

Body Positive would like to thank all contributors to the seminar as well as event sponsors, MSD, Gilead, Janssen, Abbott and ViiV Healthcare.

By John Windle

Professor Simon Mallal and professor Elizabeth Phillips visit New Zealand

Professor Simon Mallal

Professor Elizabeth Phillips

Professor Simon Mallal visited New Zealand from Perth where he is the clinical director of the Western Australian Centre for immunology and biomedical statistics. He is also an HIV physician and has an international reputation.

Body Positive invited him to attend and speak at the recent annual HIV Treatments Update seminar at the Pullman Hotel (refer to our previous story for coverage of this). After the conference he met New Zealand HIV physicians over dinner at Auckland's Northern Club where he made a presentation about Lipoatrophy.

"Lipoatrophy: forgotten but never forgiving" was the topic of his presentation. HIV medication is very toxic and the earlier medications were even more so and some have been attributed to causing a side effect called lipodystrophy which is a redistribution of the fat on the body. It can cause the limbs and buttocks to loose weight significantly out of proportion to the rest of the body. Whist we can cover up this concern by clothing it is more difficult to conceal when the face is affected and suddenly becomes very gaunt looking. This has over time been referred to as the "AIDS look". Fortunately today there are treatments that can restore volume to the face by injecting product in. (In New Zealand, Body Positive provides this clinical service to those in need.)

Worse for some is the redistribution of fat in the body to accumulate at the back of the neck creating what is referred to as "buffalo's hump". Not only disfiguring but also extremely expensive to correct, usually by surgical procedure. All of this is created by the impact of what these HIV antiretroviral medications has caused. There is no doubt that the current generation of those living with HIV are the "guinea pigs" for future generations of people living with HIV. If these external concerns create significant physcological issues for those impacted then the physical impact can be immense. Professor Mallal described the external effects as only the "tip of the iceberg".

His work in this field is world leading. His research focus has been opportunistic infections in people living with HIV with immunodeficiency and the immune systems response.

Professor Mallal has defined the prospective genetic testing that prevents hypersensitivity to abacavir, an HIV drug. This testing is now routine pharmacogenetic testing around the world.

Professor Elizabeth Phillips presented her paper on "Non-AIDS co-morbidities / pharmacogenetics and select drug toxicities".

Elizabeth is a Canadian trained internal medicine specialist with subspeciality qualifications in infectious diseases. Married to Simon Mallal and travelling together to New Zealand for the first time together both these eminent professors challenged our New Zealand physicians to think of more than universal recommendation of treatment and to think more of individualised treatment for patients. Both professors made some interesting forecasts for the future of HIV treatment and research and we all wait the outcome of this research and journey that is the lives of those living with HIV.

By Bruce Kilmister

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NEW ZEALAND

How infectious are HIV+ gay men?

Most HIV positive people share a common fear. Namely, that we don't want to transmit this virus on to anyone else. The fear is probably most intense for people in a serodiscordant relationship, but it remains a real concern for all of us.

It's not surprising that the recent news about the reduced infectiousness of people with HIV on effective treatment has raised a lot of interest.

Andrew Grulich from the Kirby Institute in Sydney believes that it's all starting to look very much like another 1996 moment.

"What we saw in 1996 was a revolution in the treatment of HIV through the introduction of highly active antiretroviral therapy (HAART)", he said.

"Now with the results of several recent studies, there is hope that we can go one step further and that treatment to prevent HIV may become a reality".

Professor Grulich is referring to *HPTN 052*, a study that was investigating whether the positive partners in serodiscordant couples could still transmit HIV on HAART. The trial was discontinued recently after they found that there was a 96% reduction in HIV transmission within the group who had commenced treatment versus those who hadn't.

He is also referring to the moderate effectiveness of the pre-exposure prophylaxis study, *IPREX*. When results came in last year, they showed that the group who took tenofovir as a prophylaxis against HIV experienced 42% fewer infections than those in the non-treatment arm. What's more, this reduction rose to more than 72% for those who took their treatments on 90% or more of the days required.

A GAME CHANGER FOR HIV PREVENTION?

HPTN 052 was run by the National Institute of Allergy and Infectious Diseases (NIAID) in the United States. It recruited 1763 serodiscordant couples from nine countries, 97% of whom were heterosexual.

Approximately half the couples were put on HAART immediately and the other half were counselled on safe sex, provided with free condoms and treated for sexually transmitted infections (STIs).

The trial started in 2005 and was due to run until 2015, but was halted by the data and safety monitoring board when it discovered that out of 28 new infections that had occurred, 27 were in the delayed treatment arm. Clearly, this group had higher rates and so was put on ART immediately.

This news comes after the Swiss Statement concluded in 2005 that the risk of transmitting HIV was greatly reduced if people were on effective antiretrovirals with an undetectable viral load.

It brings hope to organisations like UNAIDS that, providing funds can be found, antiretrovirals may play a major role in ending the epidemic in developing countries.

REASSURANCE FOR HETEROSEXUALS

This news will be of greatest reassurance to heterosexual serodiscordant couples, although scientific experts have cautioned people against abandoning safe sex.

Further studies will test the validity of this trial and for some, even a 96% reduction in HIV risk is not enough to contemplate doing away with condoms altogether.

The difficulty now is how gay male serodiscordant couples can interpret these findings.

Professor Grulich claims that receptive anal sex is about 15 times more risky for HIV transmission than vaginal sex. It's time gay couples were studied to compare the relative rates of transmission.

AUSTRALIAN STUDY IN GAY COUPLES

Such a trial has already been funded and approved in Australia by the National Health and Medical Research Council, to be led by Professor Grulich and his team at the Kirby Institute.

In what is possibly a world first, the study will begin recruiting gay male serodiscordant couples in Sydney and Melbourne. Later recruitment may also be extended to Brisbane, Adelaide and to Bangkok in Thailand. Recruitment will be through doctors' clinics and should start by the end of the year.

Both partners will be required to enroll in the trial. It will involve a greater commitment on the part of the negative partner as he will be required to get regular check-ups for HIV and STIs and complete behavioural questionnaires at interview. The positive partner will just need to provide normal blood results as a part of their regular care, and complete occasional attitudinal questionnaires. There is also an option for the positive partner to provide regular semen samples for HIV viral load testing, although this is not a requirement for participation in the study.

Grulich is already seeing a great interest in the study.

"There is understandable concern amongst gay serodiscordant couples about risk-taking and many people want to be able to quantify that risk", he says. "Many are not interested in throwing away condoms altogether but want to decrease their anxiety if occasional unprotected sex happens".

The results of the study and other studies in gay men around the world will be very important. There are unanswered questions about HIV transmission between gay men. We have not seen a sustained decrease in the level of HIV infections amongst gay men since the nineties, even though we have had relatively effective treatments since then.

Grulich wants to know the reason for this.

"We know approximately one third of new infections are transmitted by people who don't know they have the virus and many of these are at their most infectious stage if they have just contracted it", he continues.

"Certainly the increases in sexually transmitted infections (STIs) in gay men have played a role as we know that people's viral load and infectiousness also increases in the presence of an STI".

LOWER RATE OF INFECTIONS?

Professor Kit Fairley, director of the Melbourne Sexual Health Centre, thinks there is evidence of a decrease in the infectiousness of HIV positive people. He says there has been a decline in the numbers of HIV notifications for every 100 people living with HIV infection.

In other words: as the numbers of positive people are increasing, the numbers of new diagnoses has not gone up proportionately.

The difficulty now is how gay male serodicordant couples can interpret these findings.

This, he believes, is probably due to HIV positive people being less infectious.

An alternative explanation may be that as many HIV positive people enter their 50s and 60s, they may be having less at-risk sex than previously.

"The critical time for HIV infection is when it is in the early stages in someone's body", says Fairley.

He explained how science has shown that, out of the hundreds of thousands of virions present in a positive person's body, usually only one gets through to make the infection happen. The virus is naturally more infectious than the others and so when it multiplies rapidly during early infection, all the HIV viruses present are naturally more infectious. Five years down the track, the viruses have changed so most are less infectious than these early ones. Therefore people with early HIV infection are more infectious than those with established HIV infection even if their viral load is exactly the same.

Fairley believes this is an argument for getting people tested as early and frequently as possible to try to limit potential new infections. Dr Tim Read, also from the centre, is running a trial on rapid testing in men who have sex with men (MSM) to see if this increases their frequency of testing. Rapid testing provides

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results in 20 minutes compared with the current one week wait for laboratory results.

These rapid tests are currently not licensed in Australia and if they are to be in the future, it would seem likely that they will only be for clinical use.

There are too many concerns about people receiving a positive result on their own for authorities to be likely to approve the idea of home testing for HIV.

PRESSURE TO TREAT EARLIER

By showing that treatment in people with more than 350 T-cells reduces infections, *HPTN 052* will undoubtedly give rise to arguments that positive people should be treating sooner.

At the moment, both the New Zealand and Australian guidelines state that it is recommended that a person with HIV go on treatment when their CD4 counts get between 350 and 500. The commentary on the US guidelines is currently suggesting that a start at 500 CD4s will soon be recommended and soon there may be pressure for other authorities to move in this direction, too.

For the moment, condoms and lube will have to remain an essential part of our sex lives.

The START Study has been enrolling people with HIV in Australia (and many other countries) for some months now. It is designed to determine the best time to start treatments by comparing people who start when their CD4s get to 350 with people who begin at 500.

In the absence of some of the unpleasant side effects many of us experienced in the early days of HAART (and with new evidence about the long-term effects of HIV on the body), the theory is that starting earlier will have significant clinical benefits to PLHIV in the long term.

There is also no doubt that HIV positive people with negative partners will be keen to reduce their infectiousness and the probability of transmitting the virus to their partner. This could mean that positive people may ask their doctors if they can go on treatments earlier. For this to happen, the antiretroviral guidelines will need to be updated. And this will require more evidence such as the results of START when it reports.

Similarly, positive people who have a lot of casual sex will want to know how to reduce infectiousness – but for these people, there will always likely be complications. Having an increased number of partners greatly increases the chances of getting an STI, and a higher viral load certainly makes people more infectious.

Not every positive person will be ready or willing to take HIV treatments earlier, either. It takes a psychological adjustment to start taking pills for the rest of your life and it is important to get your mental approach to treatments right so you take them properly and they will be effective.

For the moment, condoms and lube will have to remain an essential part of our sex lives. There is still some risk for heterosexual serodiscordant couples on treatment and considerable uncertainty about the risks for gay couples. Taking treatments and getting an undetectable viral load have still not been proven to be an effective prevention strategy on their own.

Source: Positive Living Magazine- NAPWA (Australia)
By David Menadue

Vaccine could make HIV a chronic minor infection

A vaccine tested in a clinical trial has the potential to turn HIV into a "minor chronic infection", similar to herpes, scientists claim.

Ninety per cent of healthy volunteers given the MVA-B vaccine developed an immune response to HIV in phase I clinical trials.

"MVA-B vaccine has proven to be as powerful as any other vaccine currently being studied, or even more", said professor Mariano Esteban, at the National Biotech Centre in Madrid, where the vaccine was developed.

The vaccine consists of a harmless virus - vaccinia - which has been genetically altered to carry four HIV genes, to try to stimulate a specific immune response against HIV.

Some 30 healthy volunteers took part in the trial, 24 of whom received the MVA-B vaccine, while six were given a placebo. All study participants were given the vaccine at the beginning of the trial and after four and 16 weeks.

After 48 weeks, immunological tests on the volunteers' blood showed that around ninety per cent of the volunteers given the vaccine developed some type of immune response. The vaccine stimulated both T and B cells.

Both T and B cells are types of white blood cells; T cells seek out and destroy other infected cells, while B cells attack invading microbes by producing antibodies.

Some types of T cells act as the "brains" of the immune system and help organise the immune response against invaders. Other T cells are long-lived and form an immunological "memory", so the immune response can rapidly respond to re-infection.

Nearly three-quarters of the volunteers developed HIV specific antibodies after 48 weeks. The vaccine also triggered up to 15 different types of T cells, including memory T cells, according to the research team.

The success of the vaccine at triggering the immune response led the researchers to suggest that the MVA-B could be used as a therapeutic vaccine.

Normally vaccines are designed to prevent someone from being infected with a disease. Therapeutic vaccines are used to treat people with the disease by boosting the immune response, controlling the infection rather than eradicating it.

The next step would be to test the vaccine on people already infected with the virus, the researchers said.

Professor Esteban said, "MVA-B is not capable of removing the virus from the body as once a cell is infected, virus' genetic data is integrated and replicated with the cell".

But in a vaccinated person - "If the virus enters the body and tries to develop in a cell, the immune system is ready to inactivate the virus and destroy the infected cell".

"If this genetic cocktail passes Phase II and Phase III future clinic trials, and makes it into production, in the future HIV could be compared to herpes virus nowadays".