



The Pitt Men's Study

News and Notes

Summer 2014

PMS Researchers: Cholesterol in Immune Cells May Affect HIV Transmission

by William Buchanan

For decades we've wondered why some people don't progress to AIDS as quickly as others. Now we've discovered at least one of the reasons, and you "non-progressors" out there can thank your parents. As for everyone else, this might turn into a new and innovative way to control HIV.

Pitt Men's Study researchers looked at 30 years of data and samples that some of you provided and studied dendritic cells and B cells, both important components of our immune systems. Those men who progressed slowly had dendritic cells and B cells that contain less cholesterol than the cells of men who progressed more quickly.

That's right - low levels of cholesterol in the membranes of these cells is protective against HIV. Why? HIV needs cholesterol to transmit from one cell to another. If the transmission of HIV between cells is slowed down

because there's not enough cholesterol in the immune cells, the virus can't multiply as quickly; and if the virus is not multiplying quickly, it can't hurt one's immune system as quickly. This study also indicated that this could be an inherited trait, since it was also observed using cells that were stored in the Pitt Men's Study freezers before these volunteers become infected with HIV.

Dendritic cells are particularly crucial for HIV multiplying in our bodies because they pass the virus on to our T cells, the cells that are most responsible for viral replication. For most people today, taking highly active antiretroviral therapy interrupts viral replication and halts progression to AIDS. But now we know why some people progressed to AIDS more slowly than others without using HIV meds.

"We've known for two decades that some people don't have the dramatic loss in their T cells and progression to AIDS that you'd expect without drug therapy," said lead author Giovanna Rappocciolo, PhD, an assistant professor at Pitt's Graduate School of Public Health. "Instead the disease is much slower to progress, and we believe low cholesterol in dendritic cells may be a reason."

"We couldn't have made this discovery without the dedication of our volunteers. Results like ours are the real pay-off of the past three decades of meticulous data and specimen collection," said senior author Charles Rinaldo, PhD, chairman of Pitt's Department of Infectious Diseases and Microbiology, and principal investigator of the Pitt Men's Study.

IMPORTANT DISCLAIMER: The cholesterol discussed above is not the same as the cholesterol measured in routine blood tests. In fact, our non-progressors had similar levels of blood cholesterol as the progressors did. Notably, we used statins to treat dendritic cells and B cells from HIV negative men in the lab (*in vitro*), and this lowered the cholesterol in their membranes and shut down HIV transmission. However, we do not know if ingesting statins will have the same effect in people

The Pitt Men's Study

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What Has Mack Friedman Been Up To?



Many of you might remember Dr. Mackey R. Friedman from his days when he was just “Mack” and was drawing your blood and asking you questions.

Mack now has his PhD in public health, and works just down the hall from the Pitt Men’s Study clinic at the HIV Prevention

and Care Project. In addition to running Project Silk (a program for LGBT youth of color) Mack has been using data from the Pitt Men’s Study (part of the Multi-Center AIDS Cohort Study, or MACS) for research on bisexually-behaving men. We asked Mack about his current projects.

Q: So Mack, you’ve recently produced some scientific articles on bisexually-behaving men using data from the Pitt Men’s Study and the MACS. What can you tell us about that research?

Mack: One of the ways I’ve been using the MACS data is to look at sexually-active men over a period of seven years, and looking at differences in depression, substance use and – in HIV-positive men – viral load. I’ve been comparing bisexual men with gay men, and there are actually significant differences in these two populations. Bisexual-behaving men are much more likely to use substances and to show depression symptoms than gay-behaving men. And HIV-positive bisexual men tend to have higher viral loads than positive gay-behaving guys.

Looking at seven years in an adult life is a pretty substantial amount of time, and we’ve been able to show that these differences are not only prevalent, but also persistent. In other words, bisexual guys tend to start with worse outcomes and end with worse outcomes. And then one of the things we’ve been asking is, why do these differences exist? Why would it be that guys who are bisexual would have higher rates of, in this case, depression symptoms, substance use and HIV viral load, compared to other men who have sex with men? And you know, that’s a hard one to answer from the data we have, but we do know that bisexual men might be more alienated from gay communities, and might not receive that kind of support...they might not be as out as gay men, in other words, to partners or

family or friends, and then they might not be receiving that kind of sexuality-related social support which may push them to feeling depressed, which may make them feel like they need to use substances to self medicate.

The MACS data set is great because, as you all know, you’ve been coming to this thing forever and it takes your data every six months, which gives researchers a really nice rigorous set of time points to look at, so we can say this isn’t just a flash-in-the-pan phenomenon, but is something that’s happening in a prolonged way. And developing interventions to try to reduce some of these disparities is really at the core of why we research what we research.

Q: One of the biggest things you have going right now is Project Silk. Tell us about that.

Mack: Project Silk is a project for LGBT youth of color in Pittsburgh. We have a downtown, recreation-based space where people can socialize, vogue dance, talk to each other, develop support networks. They can also access important services like housing, employment assistance, education assistance, condoms and lubricants, HIV testing, STI testing – we do that all on site, as well as provide off-site options for those people who want to do it a little more incognito. We don’t turn anybody down who wants an HIV test, although the center is primarily for young LGBT persons of color. It’s a Centers for Disease Control-funded demonstration project that we’re partnering with the Pennsylvania Department of Health to do. It’s really exciting that we’ve had more than three hundred individual youth access the space in the year that it’s been open, and we hope to continue to establish trust in the community.

In a community where HIV is growing the most nationally, we see a tremendous amount of stigma related to HIV, at least locally, so coming out as HIV positive is not something that any of these youth want to do, even if they are positive. One of the things we’re really trying to work on is how can you eliminate that stigma or reduce that stigma so that people who are HIV positive are able to talk about it with their friends and get support for it instead of having to hide it. It’s really hard when you’re young and when all your friends are so scared by it that they can’t deal with it realistically.

The space is open Wednesday through Saturday from 3pm to 9:30pm, for more information please contact Nayck Feliz, our safe-space queen, at 412-334-4246.

Pitt Men's Study Introduces New STI Screening Program

The Pitt Men's Study is now offering a new optional screening program for the sexually-transmitted infections, gonorrhea and chlamydia. As with our syphilis screening program, the optional testing is available to all Pitt Men's Study participants.

Any individual who is sexually active is at risk for gonorrhea and chlamydia. Both can be acquired through unprotected vaginal, anal, or oral sex and may be present without symptoms. Most cases of gonorrhea and chlamydia are effectively treated with a short course of antibiotics, but infection must first be identified. The Centers for Disease Control (CDC) specifically recommends annual gonorrhea testing for men who have sex with men (MSM) as untreated infections can lead to long-term complications.

The new testing program at the Pitt Men's Study is being offered through a collaboration with the Pennsylvania Department of Health (DOH). As with our existing syphilis screening program through our county health department, your name will not accompany your samples to the testing lab. Instead, samples will be identified by your study ID number and date of birth. It is required, however, that any new cases of gonorrhea and chlamydia are reported by name to the DOH (just as all positive syphilis results are required to be reported to the county).

Please understand that this new effort is intended as a screening program only. If you become concerned about symptoms of infection (e.g. penis discharge, burning sensation with urination, anal itching or soreness) or have had a known recent exposure to a partner with gonorrhea or chlamydia, please consult with your healthcare provider or local county health department as soon as possible. If you are found to be infected with gonorrhea and/or chlamydia through the Pitt Men's Study screening program, you will be referred to your healthcare provider or another treatment site convenient to your location. The Pitt Men's Study clinic will not be equipped to provide treatment for positive infections.

If you are interested in participating in the gonorrhea/chlamydia screening program, you will be asked to sign a new addendum consent at your next study visit in order to give the Pitt Men's Study permission to collect these additional samples. You will then have the option of being tested at each of your six-month study visits. Again, this testing is voluntary. You are not required to sign the addendum consent or provide additional testing samples in order to continue your participation in the Pitt Men's Study.

We look forward to offering this free program to all of you at your next visit. For more information on gonorrhea and chlamydia infections, please refer to www.cdc.gov/std. As always, please be safe!

Cholesterol in Immune Cells May Affect HIV Transmission

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(*in vivo*) and do not endorse anyone relying on their blood cholesterol results or their use of statins to determine their HIV treatment.

The Pitt Men's Study is part of the Multicenter AIDS Cohort Study which is funded by the National Institutes of Health. This discovery was featured in the April 29, 2014 edition of *mBio*, the journal of the American Society for Microbiology. The quotations contained in this article are reprinted with permission from a press release issued on April 29, 2014 by the University of Pittsburgh Schools of the Health Sciences.



The Pitt Men's Study sponsored May's Shepherd Wellness dinner. Jessica McGuinness, Nathaniel Soltesz and Dara Stern volunteered.

Heads Up For PACT Patients

For HIV patients who receive care at Pittsburgh AIDS Center for Treatment (PACT), UPMC, it might be worth noting that impending changes in your healthcare may effect where and how you get treatment. Talking to your HIV clinic social worker might be the best way to prepare. While this information is specific to patients at PACT, all people living with HIV should be speaking with a social worker or case manager about impending health insurance changes. With that said, here are some tips to keep in mind...

If you have health insurance:

- If Medicare is your primary coverage and you have a Highmark policy, whether a Medicare HMO or Medicare Supplement, you still have access to all UPMC facilities after 1/1/2015. This also includes patients who have medical assistance coverage in addition to Medicare.
- Currently, the only Highmark plans UPMC does not accept are Community Blue plans.
- If UPMC refuses Highmark commercial plans beginning 1/1/2015, then patients need to keep this in mind during their employer's open enrollment period. Patients who do not have an insurance plan that is accepted by PACT can be referred to AGH Positive Health Clinic.
- If medical assistance is your primary coverage, UPMC PACT accepts UPMC for You and Gateway Health Plan. UPMC does not accept the following medical assistance plans: Coventry Cares, or United Health Care Community Plan for Families.

If you are uninsured:

- PACT is currently awaiting word from the Special Pharmaceutical Benefits Program (SPBP) regarding when and how they will begin assisting clients with health insurance premium and/or co-pay assistance. Pennsylvania's SPBP is one of only nine states that doesn't already have a program like this in place.
- PACT is also awaiting word regarding Governor Corbett's Healthy PA plan for uninsured individuals with income under \$16,105. The Corbet plan is not yet in place so details are unknown for the moment.
- Open enrollment for health insurance in 2015 through the ACA Marketplace begins November 15, 2014. PACT social workers are available to help and/or answer questions.
- The Ryan White Program has informed grantees that grant funds cannot be used to pay tax penalties for those who have not signed up for coverage. PACT continues to see patients if they are uninsured.

If you are a PACT patient, and have questions, you can email Pat McGlone at mcglonep@upmc.edu.

MACS Herpesvirus Study Baseline Results

By Beej Macatangay, MD

Results of the MACS Herpesvirus study, which was started in the fall of 2012, were presented at the 2014 Conference on Retroviruses and Opportunistic Infections (CROI) which was held in Boston last March 3-6. The study aimed to evaluate whether reactivation of herpesviruses, such as Epstein-Barr virus and CMV, in different body compartments is associated with the increased inflammation seen in HIV-infected individuals despite effective HIV treatment. The results showed that antiretroviral therapy-treated HIV(+) individuals, despite having an undetectable viral load and high CD4+ T cell counts, had more herpesviruses reactivating in different body compartments. In some individuals, up to 5 different types of herpesviruses were shown to reactivate. The number of viruses reactivating did not correlate with the levels of inflammation. Studies looking into the association of herpesvirus reactivation with markers of immune aging and frailty are currently underway. The study team is planning on submitting the results for publication by late spring.

Physical Exam Changes for PMS Volunteers



Attention Pitt Men's Study Participants! You will notice some changes to the physical exam. A few balance, coordination and memory tests have been added,

which will add approximately 3 minutes to your exam. The Anal Health Study has concluded. Therefore, anal Paps will no longer be performed at your study visit.

If you have any questions regarding these changes, feel free to discuss with one of our clinicians at your next study visit. Thank you for your continued participation!