



## Vaccine breakthrough

By Sean McLennan

While sex is no longer the taboo subject it once was, sexual transmitted infections certainly still remain so and despite their prevalence, people who are infected with even the most innocuous of them usually feel ashamed, dirty and alone. In reality, not many sexually active people escape completely unscathed without some sort of infection or another; even those who are health conscious and careful. Let's not forget that these bugs have evolved to exploit our weaknesses! The best of them are the most insidious and wide-spread—like the Human Papilloma Virus (HPV), the virus that causes genital warts and is associated with cervical and sometimes anal, cancer.

HPV is so successful because it is unpredictable—the majority of HPV infections clear up on their own and are completely asymptomatic (but still contagious). In some cases they result in warts and abnormal cell production which can eventually lead to cancer. Over the course of their lives, it is estimated that seventy to eighty percent of people in North America will have an HPV infection and there is no way to predict which infections will eventually show symptoms.

The International Pharmaceutical Company Merck & Co. announced some pretty exciting news this fall—there may be a commercially available HPV vaccine, called Gardasil(TM) as early as January, 2006 if the US FDA approves Merck's application. Work on an HPV vaccine has been going on for a number of years with many reported successes; however, this is the closest that we have come to seeing a mass-market product. Reportedly it was one hundred percent effective effective in Merck's final Phase III clinical trials.

An "HPV vaccine" is a little misleading however, because, like flu vaccines, Gardasil only works on certain types of HPV. HPV is not really a single virus, it is the name of a class of about thirty related viral strains and Gardasil is only effective on four. Of course, these four are the most problematic: HPV-16 and HPV-18—together these strains account for seventy-five percent of cancer cases; and HPV-6 and HPV-11 which, on the other hand, cause about ninety percent of the cases of genital warts. The treatment itself is fairly simple: three injections spaced at one and six months following the first, with no reported side-effects, although there are concerns about ensuring individuals get their follow up shots.

Hype surrounding Merck's announcement has called Gardasil a "one hundred percent Effective Vaccine for Cervical Cancer"—a statement that needs a lot of unpacking. The vaccine is not a cancer vaccine and it is certainly not 100% effective against cervical cancer. It is 100% effective against the two strains of a virus that are responsible for the majority of HPV-related cervical cancer. The reference to cervical cancer however, accurately conveys the context of the vaccine's development. Thus far, the impetus behind the vaccine has been to prevent cervical cancer and trials have been conducted primarily on women. Gardasil, once it's on the market, will be targeted at young women (hopefully pre-teens, although it will remain to be seen how the U.S. public reacts given prevailing conservative views of sex education).

Of course, both men and women are susceptible HPV infections (at about the same rate) and although rates of HPV-related cancers are much lower in men, an HPV infection reportedly doubles the risk of HIV infection in gay men. The current theory holds that this increased risk comes from an increase in CD4 cells (the immune-system cells HIV likes to infect) at the sites of HPV infections. While studies of the efficacy of the vaccine on men have been initiated, they are lagging, and the gay community is not likely to see a big impact in the near future.

It is also important to note that the impact of the vaccine will not be seen immediately, even if it becomes widely used in the next couple of years—it is only a preventative, not therapeutic vaccine. That means, that it will not work on existing HPV infections. Therapeutic vaccines are more challenging to develop, and although there are several candidates in development, we won't be seeing them for quite a while. So, although there is hope for an HPV-free population on the horizon, for the time being it is still a reality that we have to live with.

How do you know if you're infected with HPV? Most of the time you won't—most infections are asymptomatic. Although, of course, even an asymptomatic infection can be spread to another partner. On more than one occasion an outbreak of genital warts has caused some strife in presumably monogamous

relationships; one partner believes that the outbreak means that the other has been cheating on them. However, warts are not proof of infidelity—it is impossible to tell how long the infection had persisted before an outbreak or even that the accusing partner is not a unknowing carrier and caused their partner's infection themselves.

Warts, if they do show up, can vary quite a bit in their appearance, but most are raised, lighter or darker than your natural skin colour, and resemble little bunches of cauliflower. Often they will itch, but be painless and will gradually grow in size. If you notice warts you should see a physician right away—the warts can usually be diagnosed visually with the aid of a little acetic acid (basically vinegar) which turns them white.

They should be treated immediately, because if left they are only likely to grow and spread, and there will be a greater chance of infecting your partners. There are basically three types of treatments: topical agents, immunotherapy (Aldara), and surgery. Topical agents basically erode the warts layer by layer—however, DON'T use over the counter topical agents meant for regular plantar warts! They aren't the same beasts and shouldn't be treated the same. Aldara is a physician-prescribed cream that seems to stimulate your immune system to eradicate the wart on its own, although it is not known exactly how it works.

Usually, your doctor will try one of the above before resorting to surgery, but in extreme cases, especially if warts have extended into the extremely difficult to treat anal canal, there's no choice but to go under the knife or laser. Surgery is simple and performed on an out-patient basis, but is quite painful. People afraid of that option will often wait as long as they can before having their warts checked. That is really unwise—the most extensive the surgery, the more extensive the recovery period and the associated pain. The best chance to avoid pain is early detection and treatment.

As was mentioned before, the strains of HPV that cause warts and cause pre-cancerous cellular abnormalities are not the same. However, chances are, if you are infected with one strain of HPV, you'll be infected with another as well. Pap smears are used to detect the pre-cancerous cell, and although much less common that cervical pap smears, anal pap smears can also be performed. Especially, men with HIV and anal warts, should request a pap smear, because HIV+ men are at a much greater risk for developing anal cancer.

Prevention? Unfortunately, this is one of the STIs that only has one effective prevention method: abstinence. Monogamy, and reducing your number of partners is the next most effective risk reducing strategy—condoms are probably not that effective, although condom use is associated with lower incidents of cervical cancer, so there may be some helpful impact. Of course, you should be using condoms anyway to help protect yourself against other STIs that they are more effective in preventing... Finally, paying attention to your own private parts, and getting treatment at the first signs of infection, does a great deal to reduce the likelihood of spreading the virus.

So while the news of this vaccine is not an instant cure-all for the social problem of HPV, genital warts, and cervical/anal cancer, it is a reminder that medical research does produce results. Given time and resources, vaccines and cures are achievable for many medical problems and every disease conquered teaches us new ways to attack the others. There is hope that we can look forward to an STI-free world so support medical research when you can—we will all benefit in the end (no pun intended). ▼

*Sean McLennan is a native Calgarian with (nearly) a PhD in Linguistics and Cognitive Science from Indiana University, where he was heavily involved in GLBT education. He currently has a full time gig in software for mobile technology.*



**INFINITY**  
Capital Management Corp.

403.243.6784

For all your financial planning needs.