

Reducing the Burden of Hepatitis C Infection: A Goal for the Next Generation

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As a medical resident at the Royal Victoria Hospital in Montreal in the mid-1980s, I came face-to-face with the first cases of AIDS, caused by the virus known as HIV. These were most often middle age gay men who had severe pneumonia and dark red spots on their skin, known as Kaposi's sarcoma. At the time, the most important thing we could do was to keep them comfortable while they developed more infections and cancers we could control only temporarily. Our main goal was to help them die with dignity, while hoping that medical science would find better ways to address this horrible pandemic.

The transformation of HIV infection into a chronic, manageable condition is one of the most amazing accomplishments I have witnessed as a physician and an infectious diseases specialist, and as a human being. In 2015, almost all of those newly diagnosed with this disease will never go on to AIDS. Treatment is simple, often one pill taken once a day. Although there is no cure, this life-long therapy will shut off the virus such that it will not damage the immune system of the infected individual. The pills are readily available. There is still some work to be done in identifying all of those who are infected, linking them to medical care and developing strategies to make sure they take their treatment regularly and reliably. These are all challenges that we can meet with the right plan and the right resources.

Many think we have now dealt with the pandemic of this generation and we can look forward to a "world without AIDS." These same people often forget about the other viral pandemic that affects 5 times more men and women than HIV infection. It is probably the most common cause of liver failure and liver cancer in the world. It predominantly affects baby boomers, the fastest growing segment of Western society. It affects immigrants from Asia, Egypt and around the globe. It disproportionately affects the most vulnerable among us, including Aboriginal men and women and people who inject drugs (PWID). On our own Downtown East Side of Vancouver, this is the most common cause of death, according to a recent study published in the *British Medical Journal* (1). Not addiction, not HIV/AIDS. This, ladies and gentlemen, is hepatitis C virus (HCV), an infection carried by almost 150 million people worldwide.

As recently as 3 years ago, treatment for HCV infection involved a combination of weekly interferon injections and daily pills. This treatment was often needed for 48 weeks and had many side effects. Its efficacy was also limited. In some groups (especially those with more advanced liver disease), success rates were not even 50%. Projections were that HCV, not HIV, was to be the pandemic of the 21st century, with some analysts projecting that it would bankrupt health care systems.

But medical science has once again produced remarkable advances beyond any reasonable expectations. Building on how we learned to design antiviral medications for HIV, medical research has yielded two excellent HCV treatment options, Harvoni and Holkira-Pak. Treatment is generally taken for 8 or 12 weeks, most often as 1-3 pills/day, with few if any side effects. Cure rates (yes, HCV infection can be cured, not just controlled) exceed 95% in most cases. There is more to come, with shorter courses of treatment, and improved efficacy in those whose infection does not respond as well to current regimens.

A world without HCV is in sight! But this will not occur without vision, determination and a clear plan of action.

We must develop a program to test all at risk of being infected, so as to inform them of their disease and discuss treatment options. The United States have embarked on “cohort-based screening”, where all adults born between 1945-65 are offered a test for HCV as part of routine clinical care. A decision on whether Canadian authorities will support such a program is expected next spring. In the meantime, risk assessment tools must be publicized and used broadly to increase testing uptake. Health care providers must be ready to provide testing to those who request it on the basis of identified risk. Point-of-care testing with a simple mouth swab may be available, further lowering any barriers to finding out if a person is infected or not. We must develop strategies to test those who are disengaged from the health care system. We have developed the innovative “community pop-up clinic”. Once a week for 3 hours, we offer point-of-care testing for HCV infection and unique opportunities for access to multi-disciplinary care. We even hold clinics at InSite, North America’s first and only supervised injection site.

Following diagnosis, it will be important to link those who are infected to care and treatment. The medications themselves (Harvoni, Hologic-Pak and others) are quite expensive, exceeding \$50,000 per course of therapy. To their credit, third party health insurance companies and some governmental authorities have gone a long way towards making the medications available to many who need them most. The pharmaceutical industry has also developed programs to help mitigate the significant cost of treatment. In these ways, many have already received the newer “all oral” medications and benefited from them. One person to whom I had the privilege of providing care declared himself “sixth time lucky”! He had received HCV treatment on 5 separate occasions, each one less successful than the one before. He is now cured, thanks to the newer drugs.

But we can do more. We must find innovative, cost-effective ways to make treatment available to all HCV-infected individuals who request it, especially those at risk of transmitting the infection to others. In the latter case, treatment not only cures one person, but prevents several more from becoming infected. The “sticker shock” of drug acquisition cost can be tempered by forward-looking funding programs that spread the cost over multiple payers and over time, while remembering that in doing so, future health care costs (in the tens of billions of dollars) will be saved by avoiding the clinical consequences of HCV infection.

We must also develop novel models of health care delivery to vulnerable and disengaged populations. Multidisciplinary care models to address medical, psychologic, social and addiction-related needs must be encouraged. By presenting HCV treatment within a broader context of intervention, we feel more successful treatment uptake will follow. Our new **Community HCV Outreach Initiative for Care and Engagement (CHOICE)** program will allow us to reach even more people more effectively.

Once treatment is complete, the work is not done. Those with more advanced liver disease remain at risk of liver failure and liver cancer, even if HCV is cured. They will require ongoing medical follow-up. Those who continue to inject drugs remain at risk of being re-infected with HCV. Special programs need to exist to address this risk and to justify programs aimed at treating more and more HCV-infected PWID.

Reducing the burden of HCV infection in the world is truly a generational project which we must embrace. It is one we have the tools and knowledge to accomplish. It is my hope that we will take up this challenge to make the next generation proud of how we chose to confront the pandemic of our own generation.

REFERENCE

- [1] Jones AA, Vila-Rodriguez F, Leonova O, et al. Mortality from treatable illnesses in marginally housed adults: a prospective cohort study. *BMJ Open*. 2015;5(8):e008876.