



APPENDIX C: HEPATITIS C (HCV) OCCUPATIONAL EXPOSURE: FACT SHEET FOR HEALTH CARE AND EMERGENCY SERVICE PROVIDERS

Introduction

Each year there are a number of occupational exposures to hepatitis C virus (HCV) in BC¹. However, they account for <1% of new HCV infections². Nevertheless, for the exposed person these events can cause stress and anxiety.

This fact sheet provides answers to common questions that health care and emergency service providers often have about HCV after an occupational exposure. It supplements the BC Centre for Disease Control (BCCDC) guideline for the management of exposure to blood and body fluids (BBF).

What is HCV and how can it affect me?

HCV infects the liver and is transmitted by direct blood-to-blood contact. Most people who are infected do not experience symptoms. Approximately 25% (range 15%-45%) of acutely infected people will clear the virus on their own, usually within 3 months after infection. Most people 75% (range 55%-85%), remain chronically infected unless they receive antiviral therapy which can result in virological clearance in about 45 - 80% of individuals, depending on their HCV genotype. Without therapy 15% to 25 % of those chronically infected will develop progressive liver disease, over multiple decades. Unfortunately there is no vaccine to prevent transmission.

What should I do if I think I have been exposed?

Go immediately and have a risk assessment performed by a qualified health professional. This can be done at your local occupational health or emergency department. The BCCDC BBF guideline details that prompt assessment is particularly important to ensure that, if required, Human Immunodeficiency Virus and/or Hepatitis B Virus prophylaxis (treatment/vaccine to prevent infection) is initiated as soon as possible. Assessment for HCV is not as urgent because there no evidence to support post-exposure prophylaxis. However, as outlined below chronic infection with HCV may be prevented or cured with antiviral therapy.

I think I have been exposed to HCV what are the chances that I have been infected?

The risk of getting HCV infection after contact with infected blood or body fluids depends on the type of exposure and the amount of HCV in the blood or body fluid involved in the contact. For example, a hollow bore needle with infected blood piercing the skin poses a far greater risk than infected blood splashing on skin. The average incidence of anti-HCV infection after percutaneous exposure from an HCV-positive source is about 1.8% (range: 0%--7%)⁸.



Where do I get tested for HCV and why?

It is important to promptly have a risk assessment by a qualified health professional usually located at your occupational health or local emergency department to document the exposure and to obtain baseline blood samples for HCV (and other blood borne pathogens as applicable). The initial baseline assessment and blood tests are important to guide follow up.

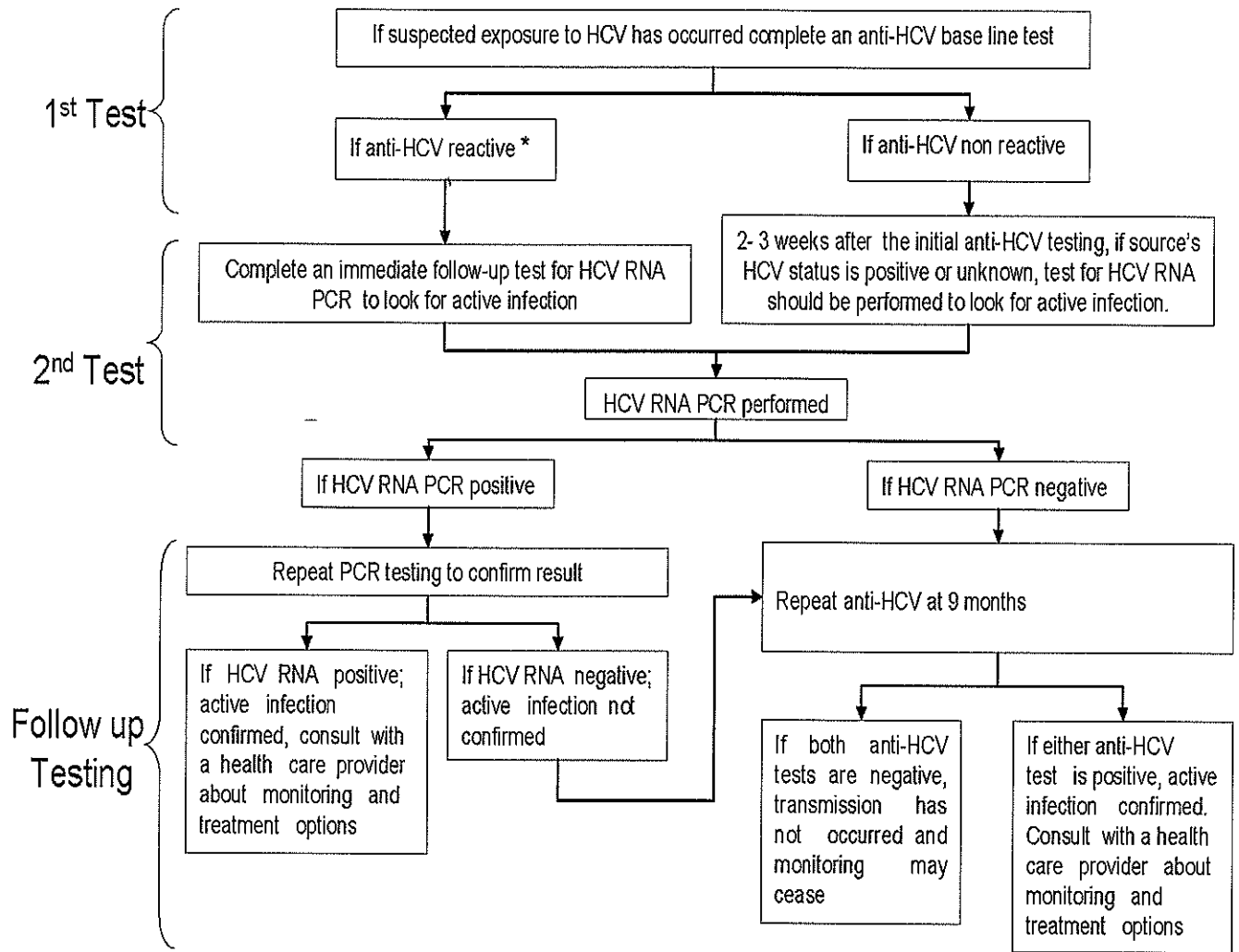
What are the tests for HCV and when will I need to have them completed?

There are two tests used in HCV testing:

1. **Anti-HCV test** – this test detects your immune system's antibody response to HCV and can determine if you have been infected in the past, but it does **not** confirm an active infection (i.e., have virus in your blood at the present time).
2. **Qualitative HCV RNA PCR** – this test detects HCV RNA (i.e., the virus) in the blood and can determine if you have an active infection.



Testing schedule for a person exposed to HCV:



* Anti-HCV takes about 5-10 weeks after infection to develop. If your baseline anti-HCV test is reactive, then you may have been infected in the past and a follow-up HCV RNA test can be performed to determine if you are actively infected (i.e., have the virus in your blood at the present time).

What is the fastest way to find out if I have been newly infected?

The fastest way to find out if you have been infected is to have a HCV RNA test completed 2-3 weeks after the exposure. This test detects HCV RNA (i.e., the virus) in the blood. Because of a small (0.1%-1.0%) chance that a positive test result is not accurate the first time, initial positive tests should be repeated on a fresh blood sample.



How will I know if I am chronically infected with HCV?

If the HCV RNA test remains positive (i.e., the virus is detectable in your blood) for 4 - 6 months after infection you are considered chronically infected and it is unlikely that your immune system will clear the virus on it's own (spontaneous clearance).

Can I have prophylactic treatment for HCV if I have been exposed?

At present there is no evidence that HCV infection can be prevented by taking medication immediately after exposure (prophylactic treatment). This is because the risk of occupational HCV transmission is very low (approximately 2%), the treatment is difficult to tolerate and 25% of infected people will clear the infection on their own. In addition, if you become infected, early treatment can prevent chronic infection in about 80%-98% of cases and chronic infections are increasingly curable with anti-viral treatment.

Once it is confirmed that I have been newly infected what should I do?

Have a discussion with a health care provider specializing in viral hepatitis. This is beneficial to determine whether you should monitor for spontaneous clearance or get early treatment. Options for early treatment include high dose interferon monotherapy or a combination of pegylated interferon alpha and ribavirin^{4,9,10,11,12,13,14,15}. Early treatment can be very successful in preventing chronic infection; success rates have ranged from 80% to 98%.

Can I receive treatment for HCV if I am chronically infected?

Yes, treatment for chronic HCV infection is an option and overall about 55% of people who complete treatment with pegylated interferon and ribavirin therapy are virologically cured of their infection. The HCV treatment duration and the probability of a viral clearance are affected by the viral genotype. Approximately 45% of genotype 1, 4, 5 and 6 infected people are cured after 48 weeks of treatment and about 75%-80% of those chronically infected with genotypes 2 & 3 are cured after 24 weeks of treatment¹⁶. A discussion with a health care provider specializing in viral hepatitis is necessary to inform you of the various therapeutic options.

Are there any new therapies for HCV forthcoming?

Yes there are several new therapies in development, which are expected to be better tolerated and increase the curability of HCV in the future.

Some suggestions on places to go for specialized viral hepatitis care

Northern Health Authority
Viral Hepatitis Clinic
Ph. (250) 565-7387

Interior Health Authority
Liver Info and Treatment Clinic
Toll free: 1-866-847-4372

Vancouver Island Health Authority
North Island Liver Service
Toll free: 1-877-215-7005

Fraser Health Authority
Fraser Hepatitis Services
Toll free: 1-800-308-3318

Vancouver Coastal Health Authority
VGH Gastroenterology Clinic
Ph. (604) 875-4111

or check with your employer or family physician for other options



References

1. Beekmann, S. E., & Henderson, D. K. (2005). Protection of healthcare workers from bloodborne pathogens. *Curr Opin Infect Dis*, 18(4), 331-336.
2. British Columbia Centre for Disease Control. (2004). British Columbia annual summary of reportable diseases. Vancouver:Author.
3. Wong, T., & Lee, S. S. (2006). Hepatitis C: A review for primary care physicians. *CMAJ*, 174(5), 649-659.
4. Alberti, A., Boccardo, S., Vario, A., & Benvegna, L. (2002). Therapy of acute hepatitis C. *Hepatology*, 36(5 Suppl 1), S195-200.
5. Micallef, J. M., Kaldor, J. M., & Dore, G. J. (2006). Spontaneous viral clearance following acute hepatitis C infection: A systematic review of longitudinal studies. *J Viral Hepat*, 13(1), 34-41.
6. Alter, H. J., & Seeff, L. B. (2000). Recovery, persistence, and sequelae in hepatitis C virus infection: A perspective on long-term outcome. *Semin Liver Dis*, 20(1), 17-35.
7. Seeff, L. B. (2002). Natural history of chronic hepatitis C. *Hepatology*, 36(5 Suppl 1), S35-46.
8. Centres for Disease Control and Prevention. (2001). Updated U.S. Public health service guidelines for the management of occupational exposures to HBV, HCV, and HIV and recommendations for postexposure prophylaxis (No. 50). Atlanta: U.S. Department of Health and Human Services.
9. Vogel, W., Graziadei, I., Umlauf, F., Datz, C., Hackl, F., Allinger, S., et al. (1996). High-dose interferon-alpha2b treatment prevents chronicity in acute hepatitis C: A pilot study. *Dig Dis Sci*, 41(12 Suppl), 81S-85S.
10. Pimstone, N. R., Pimstone, D., Saicheur, T., Powell, J., & Yu, A. S. (2004). "Wait-and-see": An alternative approach to managing acute hepatitis C with high-dose interferon-alpha monotherapy. *Ann Intern Med*, 141(6), W91-92.
11. Jaeckel, E., Cornberg, M., Wedemeyer, H., Santantonio, T., Mayer, J., Zankel, M., et al. (2001). Treatment of acute hepatitis C with interferon alfa-2b. *N Engl J Med*, 345(20), 1452-1457.
12. Nomura, H., Sou, S., Tanimoto, H., Nagahama, T., Kimura, Y., Hayashi, J., et al. (2004). Short-term interferon-alfa therapy for acute hepatitis C: A randomized controlled trial. *Hepatology*, 39(5), 1213-1219.
13. De Rosa, F. G., Bargiacchi, O., Audagnotto, S., Garazzino, S., Cariti, G., Veronese, L., et al. (2006). The early HCV RNA dynamics in patients with acute hepatitis C treated with pegylated interferon-alpha2b. *Antivir Ther*, 11(2), 165-171.
14. Kamal, S. M., Fouly, A. E., Kamel, R. R., Hockenjos, B., Al Tawil, A., Khalifa, K. E., et al. (2006A). Peginterferon alfa-2b therapy in acute hepatitis C: Impact of onset of therapy on sustained virologic response. *Gastroenterology*, 130(3), 632-638.
15. Kamal, S. M., Moustafa, K. N., Chen, J., Fehr, J., Moneim, A. A., Khalifa, K. E., et al. (2006B). Duration of peginterferon therapy in acute hepatitis C: A randomized trial. *Hepatology*, 43(5), 923-931.