

Hep C factsheets

PCR & transmission



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Introduction

PCR tests provide considerable benefit for some people with hepatitis C virus (HCV) in their capacity to determine a person's level of potential risk to transmit HCV to others.

Analysis of 30 international research studies suggests that HCV transmission does not occur in cases where the blood source is HCV PCR negative.

Such awareness will be of great benefit for people concerned about transmission risk associated with needlestick injury or pregnancy and childbirth.

Some pregnant women who test HCV antibody positive don't actually have hepatitis C (also called hep C). This would be due to either a false positive antibody test at diagnosis (they never actually had hep C) or them clearing their HCV soon after infection (this occurs in 20-30% of cases).

Women who are antibody positive but PCR negative can consider themselves cleared of HCV and their baby would have no risk of contracting hep C (vertical transmission). This compares to women who are both HCV antibody and PCR positive with whom the risk of vertical transmission is about 7% (it would occur in around one in 15 cases).

What is PCR (RNA)?

RNA testing refers to an advanced technology that is used to detect, in this case, ribonucleic acid from HCV.

Several types of RNA technologies exist with the most commonly-used version being the Polymerase Chain Reaction (PCR) test. Less commonly used versions include the transcription mediated amplification (TMA) test - which is used as a screening test by Australian blood banks, and the branched chain DNA (bDNA) test which is generally used as a research tool.

Unlike the HCV antibody test that looks for signs that the body has previously mounted an immune response to HCV, the PCR test looks for actual presence of the virus.

There are three types of PCR tests:

HCV PCR viral detection test - looks for the virus, sometimes called 'qualitative test'

HCV PCR viral load test - looks for the virus and estimates how many HCV viruses per ml of blood, sometimes called 'quantitative test'

HCV PCR genotype test - looks for the virus, and determines the particular type/s of HCV.

Health care settings

In regards to needlestick and other sharps injury in health care settings, attaining voluntary PCR testing of source individuals is recommended as a NSW Health recommendation.

In NSW, health care workers who perform exposure prone procedures must be aware of their HCV status. Those who are HCV PCR positive must not perform exposure prone procedures (see NSW Health circulars, *PD2005_311* and *PD2005_162*).

Exposure prone procedures are those with potential for a health care worker to bleed into a patient as the result of a sharps injury, e.g. surgical procedures in body cavities. The NSW Department of Health has a longer and more precise definition to guide health care workers (see above circulars).

HCV transmission risk

If someone with hep C finds out they are PCR negative, they would be making a mistake in sharing any drug injecting equipment, snorting straws, razor blades or razors, tattooing equipment, toothbrushes or other equipment that could transfer blood.

Whether PCR positive or negative, the key HCV transmission prevention message will always remain “be blood aware and avoid blood-to-blood contact”.

In any situation involving potential blood-to-blood contact, it’s important for everyone to assume that any blood is potentially infectious. Whether someone has hep C or not, there is the additional risk of contracting other bloodborne infections, eg. HIV or hepatitis B.

Also see

Hep C Genotypes (factsheet)

PCR Availability (factsheet)

Preparing For Testing (booklet)

What You Need To Know (booklet)

- This factsheet was developed by the Hepatitis C Council of NSW. It was reviewed by the Hepatitis C Council of NSW Medical and Research Advisory Panel.