Hepatitis C

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Features of Hepatitis C Virus Infection

- Incubation period: Average 6-7 weeks, Range 2-26 weeks
- Acute illness (jaundice): Mild (<20%)
- Case fatality rate: Low
- Chronic infection: 60%-85%
- Chronic hepatitis: Age-related 10%-70% (most axs)
- Cirrhosis: <5%-20%
- Mortality from CLD: 1%-5%

Chronic Hepatitis C

Factors Promoting Progression or Severity

- Increased alcohol intake
- Age > 40 years at time of infection
- HIV co-infection
- Other
  - Male gender
  - Chronic HBV co-infection

Serologic Pattern of Acute HCV Infection with Recovery

Serologic Pattern of Acute HCV Infection with Progression to Chronic Infection

Hepatitis C Virus Infection, United States

- New infections per year 1985-89: 242,000
  - 2001: 25,000
- Deaths from acute liver failure: Rare
- Persons ever infected (1.8%): 3.9 million (3.1-4.8)*
- Persons with chronic infection: 2.7 million (2.4-3.0)*
- HCV-related chronic liver disease: 40% - 60%
- Deaths from chronic disease/year: 8,000-10,000

*95% Confidence Interval
Estimated Incidence of Acute HCV Infection
United States, 1960-2001

![Graph showing estimated incidence of acute HCV infection from 1960 to 2001.](image)


Prevalence of HCV Infection by Age and Gender, United States, 1988-1994

![Graph showing prevalence of HCV infection by age and gender from 1988 to 1994.](image)

Source: CDC, NHANES III, NEJM 1999

Exposures Known to Be Associated With HCV Infection in the United States

- Injecting drug use
- Transfusion, transplant from infected donor
- Occupational exposure to blood
  - Mostly needle sticks
- Iatrogenic (unsafe injections)
- Birth to HCV-infected mother
- Sex with infected partner
  - Multiple sex partners

Reported Cases of Acute Hepatitis C by Selected Risk Factors, United States, 1982-2001*

![Graph showing reported cases of acute hepatitis C by selected risk factors from 1982 to 2001.](image)

* 1982-1990 based on non-A, non-B hepatitis

Sources of Infection for Persons With Hepatitis C

- Injecting drug use 60%
- Sexual 15%
- Transfusion 10%
- Occupational 4%
- Other 1%
- Unknown 10%

* Nosocomial; iatrogenic; perinatal

Source: Centers for Disease Control and Prevention

Reduce or Eliminate Risks for Acquiring HCV Infection

- Screen and test donors
- Virus inactivation of plasma-derived products
- Risk-reduction counseling and services
  - Obtain history of high-risk drug and sex behaviors
  - Provide information on minimizing risky behavior, including referral to other services
- Vaccinate against hepatitis A and/or hepatitis B
- Safe injection and infection control practices

Source: MMWR 1998;47 (No. RR-19)
HCV Prevalence by Selected Groups
United States

<table>
<thead>
<tr>
<th>Group</th>
<th>Average Percent Anti-HCV Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hemophilia</td>
<td>0</td>
</tr>
<tr>
<td>Injecting drug users</td>
<td>1</td>
</tr>
<tr>
<td>Hemodialysis</td>
<td>0</td>
</tr>
<tr>
<td>STD clients</td>
<td>2</td>
</tr>
<tr>
<td>Gen population adults</td>
<td>4</td>
</tr>
<tr>
<td>Surgeons, PSWs</td>
<td>6</td>
</tr>
<tr>
<td>Pregnant women</td>
<td>8</td>
</tr>
<tr>
<td>Military personnel</td>
<td>0</td>
</tr>
</tbody>
</table>

HCV Testing Routinely Recommended

*Based on increased risk for infection*
- Ever injected illegal drugs
- Received clotting factors made before 1987
- Received blood/organs before July 1992
- Ever on chronic hemodialysis
- Evidence of liver disease

*Based on need for exposure management*
- Healthcare, emergency, public safety workers after needle stick/mucosal exposures to HCV-positive blood
- Children born to HCV-positive women

Postexposure Management for HCV

- IG, antivirals not recommended for prophylaxis
- Follow-up after needlesticks, sharps, or mucosal exposures to HCV-positive blood
  - Test source for anti-HCV
  - Test worker if source anti-HCV positive
  - Anti-HCV and ALT at baseline and 4-6 months later
  - For earlier diagnosis, HCV RNA at 4-6 weeks
  - Confirm all anti-HCV results with RIBA
- Refer infected worker to specialist for medical evaluation and management

HCV Counseling

- Prevent transmission to others
  - Direct exposure to blood
  - Perinatal exposure
  - Sexual exposure
- Refer to support group

Preventing HCV Transmission to Others

**Avoid Direct Exposure to Blood**
- Do not donate blood, body organs, other tissue or semen
- Do not share items that might have blood on them
  - personal care (e.g., razor, toothbrush)
  - home therapy (e.g., needles)
- Cover cuts and sores on the skin

Persons Using Illegal Drugs

**Provide risk reduction counseling, education**
- Stop using and injecting
- Refer to substance abuse treatment program
- If continuing to inject
  - Never reuse or share syringes, needles, or drug preparation equipment
  - Vaccinate against hepatitis B and hepatitis A
- Refer to community-based risk reduction programs

HCV Counseling
Mother-to-Infant Transmission of HCV

- Postexposure prophylaxis not available
- No need to avoid pregnancy or breastfeeding
  - Consider bottle feeding if nipples cracked/bleeding
- No need to determine mode of delivery based on HCV infection status
- Test infants born to HCV-positive women
  - >15-18 months old
  - Consider testing any children born since woman became infected
  - Evaluate infected children for CLD

Sexual Transmission of HCV

Persons with One Long-Term Steady Sex Partner

- Do not need to change their sexual practices
- Should discuss with their partner
  - Risk (low but not absent) of sexual transmission
  - Counseling and testing of partner should be individualized
    - May provide couple with reassurance
    - Some couples might decide to use barrier precautions to lower limited risk further

Persons with High-Risk Sexual Behaviors

- At risk for sexually transmitted diseases, e.g., HIV, HBV, gonorrhea, chlamydia, etc.
- Reduce risk
  - Limit number of partners
  - Use latex condoms
  - Get vaccinated against hepatitis B
  - MSMs also get vaccinated against hepatitis A

Other Transmission Issues

- HCV not spread by kissing, hugging, sneezing, coughing, food or water, sharing eating utensils or drinking glasses, or casual contact
- Do not exclude from work, school, play, childcare or other settings based on HCV infection status