
Information for Behavioral Health Providers in Primary Care

Hepatitis Information Sheet

Hepatitis

- Hepatitis is an inflammation of the liver. This can be caused by alcohol and some drugs, but usually it is the result of a viral infection. There are many types of virus which can cause hepatitis. Each of these viruses acts differently.
- The hepatitis viruses cause most liver damages worldwide, although hepatitis can also be caused by toxins (notably alcohol), other infections, or from autoimmune processes.
- Hepatitis may run a subclinical course when the affected person may not feel ill. The patient becomes unwell and symptomatic when the disease impairs liver functions
 - Acute: lasting < 6 months mostly due to viral infections including hepatitis A through E
 - Chronic: lasting longer than 6 months (Hep A and E viral infections do not lead to chronic disease).

Symptoms of Acute and Chronic Hepatitis

Acute: Symptoms vary from mild requiring no treatment to hepatic failure needing liver transplantation

- Non-specific symptoms: Flu-like symptoms, malaise, muscle aches, fever diarrhea, headache
- Specific symptoms: Profound loss of appetite, dark urine, yellow eyes and skin, abdominal discomfort, aversion to smoking among smokers

Chronic: Majority of patients remain asymptomatic or mildly symptomatic manifested with abnormal blood tests

Hepatitis Information Sheet (continued)

- Re-expression of acute symptoms, fluid retention, abdominal fullness (due to enlarged liver).
- extensive liver damage (cirrhosis) leads to weight loss and easy bruising and bleeding

Most Common Types of Hepatitis Viruses

Hepatitis A (HAV): Hep A is transmitted through contaminated food or water, personal contact, and eating raw sea food.

- occurs primarily in third world countries
- HAV does not have a chronic stage
- Antibodies are formed against HAV that guard against future infection
- vaccine is available that prevents life long HAV infection
- no specific medications available to cure infection although immune globulin is used to prevent HAV if given within 2 weeks of exposure
- infected people excrete HAV virus in their stool 2 weeks before and 1 week after appearance of jaundice
- 15% of sufferers experience relapsing symptoms from 6 to 12 months following initial diagnosis

Hepatitis B (HBV): The HBV virus can cause both acute and chronic (15%) hepatitis and is transmitted through blood, sexual intercourse, or in utero as the virus can cross the placenta.

- 95% of infected individuals in US attain antibodies guarding against future infection
- HBV infection establishes itself in the DNA of affected liver cells and is thought to be a likely cause of immune complex disease
- Vaccine is available that prevents life long HBV infection and 6 FDA approved treatment options for the infected

Hepatitis C (HVC): HCV can lead to chronic hepatitis culminating in cirrhosis

- can remain asymptomatic for 10-20 years
- no vaccine is available, but a recent (January 2007) breakthrough has been announced predicting a vaccine in about 5 years
- Hep C virus can be reduced to undetectable levels by a combination drug regimen consisting of interferon and the antiretroviral drug ribavirin
- Genotype I is more resistant to interferon therapy compared to other genotypes

Other Select Causes of Hepatitis

Hepatitis Information Sheet (continued)

Alcoholic Hepatitis: Hepatitis caused by a period of increased ethanol consumption

- Varies from mild with only liver test elevation to severe liver inflammation with development of jaundice, prolonged prothrombin (blood clotting) time, and liver failure
- Mortality rate of severe cases is 50% within 30 days of onset

Drug Induced Hepatitis: The following drugs may cause hepatitis in individuals sensitive to the drug:

- allopurinol, amitriptyline (antidepressant), amiodarone (antiarrhythmic), azathioprine, halothane (a specific type of anesthetic gas), hormonal contraceptives, ibuprofen and indometacin or indomethacin (non-steroidal anti-inflammatory - NSAIDs), isoniazid (INH), rifampicin and pyrazinamide (tuberculosis-specific antibiotics), ketoconazole (antifungal), methyl dopa (antihypertensive), minocycline (tetracycline antibiotic), nifedipine (antihypertensive), nitrofurantoin (antibiotic), phenytoin and valproic acid (antiepileptics), zidovudine (antiretroviral against AIDS)

Acetaminophen Overdose

Amatoxin-containing Mushrooms

Some Industrial Chemicals: such as carbon tetrachloride (a dry cleaning agent), chloroform, trichloroethylene, and white phosphorus

Some Metabolic disorders: such as hemochromatosis (due to an iron accumulation) and Wilson's disease (copper accumulation)

Other viruses potentially able to cause hepatitis: mumps, rubella, cytomegalovirus, Epstein-Barr and other herpes viruses

Treatment and Side Effects

6 FDA-approved treatment options for patients with chronic HBV: alpha-interferon, pegylated interferon, adefovir, entecavir, telbivudine and lamivudine. About 45% of persons on treatment achieve a sustained response

- Interferon is a synthetic reproduction of a protein used to fight viruses by boosting the immune system. Interferon also interferes with the virus's ability to reproduce.
 - Side Effects of Interferon: flu-like symptoms (fever, sweats, muscle pain, headaches), depression and mood changes, changes in blood cell counts, hair loss/thinning, thyroid problems, weight loss

Hepatitis Information Sheet (continued)

- NRTI's (Nucleotide analog reverse transcriptase inhibitor): work by blocking reverse transcriptase, an enzyme that is crucial for the reproduction of HBV
 - Lamivudine (1995/2002): Originally FDA approved in 1995 and then again in 2002 for use with Zidovudine (AZT) as a medication for HIV. It also inhibits reverse transcriptase of HBV. Unfortunately, long term use for HBV leads to viral resistance
 - Adefovir (FDA approved 9/2002): The main benefit of Adefovir over Lamivudine (1st NRTI approved for HBV) is that it delays the virus resistance time (time it takes the virus become resistant to it).
 - Entecavir (FDA approved 3/2005): inhibits all 3 steps in viral replication process and supposedly more efficacious than Adefovir and Lamivudine
 - Telbivudine (FDA approved 10/2006): antiviral having less side effects than other anti-virals, especially Lamivudine
- Side Effects:
 - Lactic acidosis (the build up of lactic acid in the body). Symptoms include unusual muscle pain and weakness, trouble breathing, fast or uneven heart rate, nausea, vomiting, stomach pain, and numbness or cold feeling in your arms or legs

Hepatitis Vaccines

Vaccines are available for HAV and HBV, but not for HBC

- Twinrix is a vaccine for both hepatitis A and hepatitis B. It combines two FDA-approved vaccines—Havrix, for hepatitis A, and Engerix-B

Adapted from information from the World Health Organization.