WELCOME TO LIVER WELLNESS CLASS
Topics of the Class

• YOUR LIVER
• Types of hepatitis
• How hepatitis is spread
• How to protect your liver
• Treatment for hepatitis C
What does your liver do?

- Makes chemicals that your body needs to stay healthy
- Removes waste products and other harmful substances from your blood
- Guards against infection
The liver is a factory

- Builds and converts proteins and sugars
- Stores vitamins, sugars, fats, and other nutrients
- Releases chemicals and nutrients into the body when needed
What is hepatitis?

• “Hepatitis” means inflammation of the liver

• There are many types of hepatitis

• Hepatitis can be caused by:
  • Viruses (hepatitis A, B, C, D, E)
  • Alcohol
  • Medications (including over-the-counter medicines and herbal remedies)
  • Genetic diseases
What are liver enzymes?

- Molecules inside your cells that speed up certain chemical reactions, such as:
  - Changing food into usable nutrients
  - Removing harmful substances
- When liver cells are damaged, enzymes leak into the bloodstream
  - Lots of enzymes in the bloodstream sometimes indicates liver problems
Hepatitis A

- Spread through contaminated food and water
- Hepatitis A vaccine is available to prevent infection with hepatitis A
Hepatitis B

- Spread through blood-blood contact
- Also transmitted through sex
- Hepatitis B vaccine is available to prevent hepatitis B infection
Hepatitis C

- Discovered in 1989
- Tests for hepatitis C became available in 1992
- Originally called “non-A, non-B” hepatitis
- Spread through blood-to-blood contact, including:
  - shared injection needles
  - blood transfusions
- No vaccine is available to prevent infection
How common is hepatitis C?

• About 4 million Americans are infected
• About 170 million people are infected worldwide
How do people become infected with hepatitis C?

- Injection (IV) drug use – past or current
- Blood transfusions before 1992
- Snorting cocaine
- Needle stick injuries in hospitals
- Body piercing with unsterilized needles
- Tattoos with unsterilized ink or needles
- Sharing razors or toothbrushes
- Sexual transmission
  - Rare in monogamous couples
What about sex?

- Sexual transmission of hepatitis C is uncommon but not impossible
- If you have more than one sex partner, use latex condoms and disclose your hepatitis C infection to your partners
- If you have one long-term sex partner, you may not need to change your sex habits, but your partner should be informed of your infection
Hepatitis C is NOT spread by

- Sneezing
- Coughing
- Food or water
- Sharing a drinking glass or eating utensils
- Handshakes
- Holding hands
- Hugging
- Kissing on the cheek
- Playing with children

Hepatitis C is not passed through tears, sweat, or saliva
Who should be tested for hepatitis C?

- People with a risk of hepatitis C infection
- Anyone born between 1945 and 1965
- Anyone who wishes to be tested
How can you prevent the spread of hepatitis C?

• Cover open wounds
• Tell people not to touch your blood
• Dispose of needles properly
• Do not share razors, toothbrushes, or other personal care items
• Practice safe sex
Hepatitis C is diagnosed by blood tests

- The first test is a screening test:
  - Hepatitis C antibody
- If the screening antibody is positive, a second test is needed for diagnosis:
  - Hepatitis C RNA test
- If the RNA test is positive, then there is a diagnosis of chronic hepatitis C
What is your hepatitis C genotype?

• There are 6 major genotypes in the U.S.
• Genotype is a “strain” of hepatitis C
  • Different medicines are used for different genotypes
• In the United States, we mostly see:
  • Genotype 1 (1a and 1b)
  • Genotype 2
  • Genotype 3
• There are no “good” or “bad” genotypes!
Why should you be concerned about hepatitis C?

- Hepatitis C can cause serious health problems, including:
  - Fibrosis
  - Cirrhosis
    - Compensated cirrhosis
      - Few symptoms
    - Decompensated cirrhosis
      - Symptoms can include yellow jaundice, swelling, fluid in the abdomen, GI bleeding, poor blood clotting, confusion
  - Liver cancer: hepatocellular carcinoma (HCC)
Possible outcomes of hepatitis C

Hepatocellular Carcinoma (HCC)

- Most common type of liver cancer
- Sometimes treated with special radiology procedures such as ablation of the tumor
- Sometimes can be treated with liver transplant
- Patients living with hepatitis C or cirrhosis are at risk of developing HCC
How does alcohol affect the risk of developing liver cancer (HCC)?

The diagram shows the risk of liver cancer based on alcohol consumption and the presence of Hepatitis C. The x-axis represents different levels of alcohol consumption (Non-Drinker, Heavy Drinker) and the y-axis represents the risk of liver cancer.

- **Without Hepatitis C**
  - Non-Drinker: 1
  - Heavy Drinker: 9

- **With Hepatitis C**
  - Non-Drinker: 15
  - Heavy Drinker: 147

The risk is significantly higher for heavy drinkers, especially with the presence of Hepatitis C.
With hepatitis C, you should . . .

• Minimize alcohol, or if you have cirrhosis, then avoid alcohol completely
• Be careful with medications, including over-the-counter and herbal medications
• Maintain a healthy weight
• Get the hepatitis A and hepatitis B vaccines
What about vitamins and herbs?

• Iron supplements are NOT recommended for men or post-menopausal women
  • Too much iron can increase the rate of liver damage
• Milk thistle is safe, but there is no evidence that it will improve your liver
• Talk with your provider before starting any new medication or supplement
Can I take Tylenol or ibuprofen?

• Acetaminophen (Tylenol)
  • Acetaminophen at low doses is safe with hepatitis C
  • Maximum dose of 2,000 mg per day = 4 extra strength or 5 regular strength per day
  • Cold and flu medications may contain acetaminophen – read the ingredients and do not exceed the 2,000 mg maximum

• Ibuprofen, Motrin, Aleve, Naproxen = NSAIDS
  • Hepatitis C without cirrhosis
    • May take NSAIDS but do not exceed recommended dose
  • Hepatitis C with cirrhosis
    • Do not take NSAIDS at all!
Treatment of chronic hepatitis C

Goals

• Clear all the hepatitis C virus from the body
• Slow or stop damage to the liver
• Reduce risk of cirrhosis and liver cancer

High success with new drugs

• Current treatments can usually cure over 90% of patients who take their medicines correctly
How is hepatitis C treated?

- Medications called direct-acting antivirals (DAAs)
  - Directly attack hepatitis C
  - All DAAs are in pill form
- Indirect antivirals
  - Ribavirin (pills)
  - Interferon (injections) – rarely used anymore
- Treatment usually lasts 12 weeks
  - Occasionally 8, 16, or 24 weeks
- Side effects are uncommon and usually very mild
  - Fatigue, headache, nausea, or rash may occur
Which treatment is right for you?

Recommended treatment will depend on:

- Your genotype
- The amount of liver damage (fibrosis) present
- Other current medications
- Other health conditions
During treatment . . .

• Take medications exactly as prescribed
  • Do not start a new medicine without discussion with your hepatitis C provider
  • Do not stop taking medications without notifying clinic!

• Follow-up visits at least once a month
  • More frequent visits for side effects

• Blood testing once a month or more frequently

• Pick up medicines at VA pharmacy each visit
  • They will NOT BE MAILED!!!!

• Stay in touch
Viekira Pak™
Viekira™ = Ombitasvir/Paritaprevir/Ritonavir + Dasabuvir

- Used with genotype 1 or 4*
- 3 pills in morning, 1 pill at night
  - May be prescribed with or without ribavirin
- 12-24 weeks of treatment
- Does not affect kidney function
- Mild side effects
  - Headache, nausea, rash

*Viekira Pak™ is not FDA approved for treatment of genotype 4 chronic hepatitis C infection.
Zepatier™

Zepatier™ = Elbasvir/Grazoprevir

- Elbasvir/grazoprevir (50/100 mg)
  - Two DAAs combined in 1 tablet
- Approved for use with genotype 1 or 4
- Taken as 1 tablet per day, 12 or 16 weeks of treatment
- Resistance testing is required for Genotype 1a patients
  - If a resistance mutation is present, prescribe elbasvir/grazoprevir (50/100 mg) + Ribavirin, 16 weeks of treatment
- Mild side effects
- Can be used for patients with poor renal function
**Ledipasvir/Sofosbuvir**

**Harvoni® = Ledipasvir/Sofosbuvir**

- Two drugs combined in 1 tablet, 1 per day
- Used to treat genotype 1, 4, 6
- May be prescribed with or without ribavirin
- Treatment length: Usually 12 weeks
  - Some patients MAY qualify for 8 weeks of treatment
  - Rarely patients may need 24 weeks of treatment
- Cannot be used for patients with poor renal function
- Mild side effects
  - Nausea, headache
**Sofosbuvir**

Sovaldi® = Sofosbuvir

- Used in regimens either with other DAAs and/or ribavirin
  - Sofosbuvir + Ribavirin for genotype 2
  - Daclatasvir + Sofosbuvir ± Ribavirin for genotype 3
  - Sofosbuvir + Simeprevir ± Ribavirin for genotype 1
- Sofosbuvir is also in fixed combination tablets
  - Ledipasvir/Sofosbuvir tablets (Harvoni®) for genotype 1, 4, 6
- Mild side effects
  - Fatigue, headache, nausea
Daclatasvir

Daklinza™ = Daclatasvir

- Currently used for genotype 3
- Always taken with sofosbuvir
- May also be used with sofosbuvir + ribavirin
- Treatment 12-24 weeks
- Mild side effects
  - Fatigue, headache, nausea
Ribavirin

• Used with other drugs, for all genotypes
• Dosage varies
  • Usually 2-3 capsules in the morning and 2-3 capsules in the evening
• More challenging side effects
  • Anemia (low red blood cells), rash, headache, cough
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