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Common GI Problems: Volume 2

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Normal Digestive Function

The digestive tract is a continuous tube that breaks food down into nutrients that can be absorbed. Once food enters the stomach, it begins mixing with digestive juices and is passed into the small intestine a little at a time. As the food passes along the small intestine, which is actually over twenty feet long, the nutrients are absorbed through the wall of the intestinal tract and passed into the bloodstream. By the time the food has reached the large intestine, also

called the colon, the nutrients have been removed and waste materials remain. In the colon, the waste material is passed along by a series of muscle contractions, called peristalsis, and eventually the waste reaches the end of the digestive tract, the rectum. The colon absorbs water from the waste material, but if the muscle contractions are not normal, a change in bowel habit can occur.

What is a normal bowel habit?

There is a wide variation in normal bowel habits, but the average person will move his or her bowels anywhere from three times a day to three times a week. Anything in that range is therefore considered "normal" and the important thing is what is normal for you.

What is constipation?

Constipation refers to a condition where the bowels move infrequently and the consistency of the stool is often dry and hard. This usually results from excess absorption of water from the stool due to slow passage of the stool in the colon. Answers to certain key questions can help you identify constipation.

Has there been any change in diet, exercise habits, lifestyle (daily routine), or stress level? Any alteration or deviation from a normal routine may result in an alteration in bowel habits.

What medications are being used? Certain medications including iron, narcotic analgesics, various anti-hypertensive drugs, and a variety of additional medications can produce constipation.

Are there other symptoms? People with constipation will often complain of a feeling of abdominal fullness or bloating. They may also experience rectal pressure or discomfort. Gaseousness, abdominal distension, and the feeling of incomplete elimination are also common complaints.

When should I see my doctor?

Medical attention should be considered for any sustained change in bowel habit. Other symptoms which should prompt a visit to the doctor include: weight loss, severe abdominal pain, or rectal bleeding. These symptoms may be a sign of a more serious condition. Several common disorders of the endocrine system may also produce altered bowel habits (for example, diabetes and thyroid disease).

What type of testing should be done?

Your physician will ask you a series of questions to attempt to determine the severity of the problem. A physical examination will be performed. Laboratory testing is often done. Your doctor may recommend x-rays of your colon (a test called a barium enema) or may advise endoscopic tests called flexible sigmoidoscopy or colonoscopy. These tests involve the insertion of a flexible lighted tube into the rectum which passes up to the colon so that your doctor can tell if there are any abnormalities such as polyps (an abnormal growth) or tumors.

How can I solve my problem?

Daily fluids (6-8 glasses/day)

Exercise

High fiber diet

It is important to eat regular, healthy meals and to drink plenty of fluid. A regular exercise program also promotes proper bowel function. You should obey the urge to have a bowel movement. Delaying this important message from your digestive tract may cause your stool to become hard and difficult to pass. The best treatment, however, is a diet rich in fiber.

All About Fiber

What is it?

Fiber is the part of food from plants which is resistant to digestion. There are two kinds of fiber, soluble and insoluble. Soluble fiber is digested by bacteria in the colon. Examples of soluble fiber are oat bran and psyllium. Soluble fiber can help lower blood cholesterol. Insoluble fiber probably works best for constipation. Examples include wheat bran, cereal grains and the peels of various fruits such as apples and pears.

Why is it important?

Fiber adds bulk to the stool. It is for this reason that fiber is sometimes referred to as bulk or roughage. Fiber works by helping the stool retain water and also helps to move materials along the colon more quickly, it "keeps things moving."

Where do I get fiber and how much is the right amount?

The average American diet includes only 10 to 20 grams of fiber daily. Your goal should be 30 to 35 grams daily. There are a variety of foods high in fiber. Fruits, vegetables, whole grain breads and pasta are excellent examples. Try substituting brown rice for white rice...it has triple the fiber! Bran is also a great source of fiber, and it can be found in various commercial cereal products but also unprocessed in health food stores. Bran can easily be added as a filler for casseroles and other mixed dishes.

Finally, there are a number of commercially-available fiber supplements available to consumers. These products often contain psyllium, but other fiber supplements (with names like methyl cellulose and polycarbophil) are also available. These products can be found in pharmacies or grocery stores and do not require a prescription.

Don't forget to drink plenty of fluids. A goal of eight 8-ounce glasses of water daily is reasonable. Mild natural cathartics such as prunes, sauerkraut, or green sprouts may be effective in relieving constipation.

What else should I know about constipation?

A common mistake is to ingest large amounts of fiber when the body is not accustomed to it. This may produce some unpleasant side effects, especially excessive gas, and cause you to become discouraged.

Avoid stimulant laxatives (mineral oil, Dulcolax, Senokot, etc.) if at all possible. A suppository or gentle enema is better to use if constipation becomes severe. Constipation is a side effect of many commonly used medications, which your doctor can review with you.

These simple measures will generally produce a satisfactory result. Treat your digestive tract right, and it will be good to you.

Gallstones

by: Eldon A. Shaffer, M.D., FACP, John S. Goff, M.D., FACP & Gary W. Falk, M.D., FACP

- * What is the gallbladder and what does it do?
- * What are gallstones?
- * How are gallstones formed?
- * Are all gallstones the same?
- * Who is at risk for developing gallstones?
- * What symptoms are associated with gallstones?
- * How are gallstones diagnosed?
- * How are gallstones treated?

What is the gallbladder and what does it do?

The gallbladder is a pouch that sits beside the liver and stores bile, a green-yellow fluid produced by the liver. After eating, the gallbladder releases bile into the small intestine where it helps to digest fats.

What are gallstones?

Gallstones are solid clumps of cholesterol crystals or pigment material that form in the gallbladder.

How are gallstones formed?

Some fatty components (such as cholesterol) are not easily dissolved in bile. When there is too much of these bile components, they precipitate and form solid crystals. These clump together forming gallstones -- also known as cholelithiasis.

Are all gallstones the same?

No. There are different types of gallstones, depending on what component of the bile has solidified. Also, the stones can vary in size ranging from tiny, sand-like particles less than one millimeter in diameter to pea-like particles more than four centimeters in diameter.

Almost 90 percent of gallstones are composed of cholesterol. The remainder consist of pigment material (bilirubin). The reason for the formation of pigment stones is not yet fully understood. However, some people with blood disorders such as sickle cell anemia are at risk for developing pigment stones.

Who is at risk for developing gallstones?

* Gallstones occur in up to 20 percent of American women and 10 percent of men by the age of 60.

* Women between the ages of 20 and 60 are three times more likely to develop gallstones than men, and women who have had multiple pregnancies are also more likely to develop gallstones.

* The risk of gallstones increases with age and with obesity.

What symptoms are associated with gallstones?

Patients with symptomatic gallstones experience severe abdominal pain, and may suffer further complications such as jaundice (yellowing of the skin and eyes), and inflammation of the gallbladder, bile ducts, liver or pancreas. However, about 80 percent of people who have gallstones have no symptoms. These people are said to have so-called "silent" gallstones with no associated pain. Gas and indigestion are not specific symptoms of gallstones or gallbladder disease.

How are gallstones diagnosed?

Gallstones are usually diagnosed by ultrasound. Other procedures, such as x-rays, may also be used. Often silent gallstones are detected incidentally during the investigation of another problem.

How are gallstones treated?

Silent gallstones do not require treatment. Several gallstone therapies are available to people with symptomatic gallstones. There are two surgical methods to remove the gallbladder and its gallstones under general anaesthesia:

* "Open" cholecystectomy is the classic surgical treatment for gallstones. This procedure requires an abdominal incision. The patient remains in the hospital for five to seven days to recover.

* "Laparoscopic" cholecystectomy is a newer surgical treatment whereby the gallbladder is removed through a small abdominal incision using a lighted tube (called a laparoscope). The surgeon views the entire procedure on a television monitor. Because there is no cutting through the muscle of the abdominal wall, the recovery period is much shorter.

There are two medical therapies to get rid of gallstones, leaving the gallbladder intact:

Oral Dissolution of gallstones by means of medication (ursodeoxycholic acid) involves no surgery and is therefore suitable in patients for whom surgery may be risky. The rate of success

is variable (40-80 percent) and treatment usually requires at least six to twelve months. Recurrence is common. The best candidates are those with very small cholesterol gallstones and those who have mild symptoms.

Extracorporeal Biliary Lithotripsy is a procedure in which doctors find the gallstones using an ultrasound machine and position the patient so that high-energy shock waves focus on the stones. The waves break the gallstones into fragments, which either pass into the intestine or are dissolved with the help of medication. This treatment is performed in an outpatient setting; however, very few centers have this technique available.

Prevention

Because obesity is a risk factor, people should aim to maintain an ideal body weight. Otherwise there is no specific diet for gallstone disease. Very obese individuals who are attempting drastic weight reduction are at risk for developing gallstones. They should lose weight under medical supervision.

Hemochromatosis

by **Bruce R. Bacon, M.D., FACC**

- * What is hemochromatosis?
- * What are the symptoms of hemochromatosis?
- * How is hemochromatosis diagnosed?
- * How is hemochromatosis treated?
- * Can hemochromatosis be confused with other liver diseases?
- * Should family members be screened?
- * Summary

What is hemochromatosis?

Hemochromatosis is a common disorder of iron metabolism resulting in iron overload and affecting about 1 in 250 individuals of Northern European descent. It is an inherited disorder, but to actually develop problems from hemochromatosis you must inherit two abnormal genes, receiving one from each parent. If you have inherited both abnormal genes, you will absorb increased amounts of iron from your diet and will gradually accumulate excess iron, primarily in the liver. Over many years, these increased iron deposits in the liver can result in liver disease such as cirrhosis and cancer of the liver.

What are the symptoms of hemochromatosis?

Symptoms from hemochromatosis are often vague and nonspecific and may include weakness, lack of energy, upper abdominal pain, and weight loss. Parts of the body other than the liver can also be affected by hemochromatosis and cause more specific symptoms. For example, patients may develop arthritis and have joint pain. Patients may have involvement of the heart and develop abnormal heart rhythms or symptoms of heart failure. Patients can develop abnormalities in the pancreas including diabetes. Early in the disease, patients may not have any symptoms at all.

How is hemochromatosis diagnosed?

Currently, the most common way that patients with hemochromatosis come to medical attention is by having abnormal levels of iron in the blood identified during routine blood tests. Thus, if you have any of the symptoms mentioned above, or if screening blood tests are abnormal, you should be evaluated for hemochromatosis.

Typically, if hemochromatosis is suspected, the patient will be asked to have a liver biopsy. A liver biopsy is a procedure, performed using local anesthesia, where a needle is inserted to

remove a small specimen of liver tissue so that it can be examined microscopically. When the liver biopsy is performed, the liver tissue that is removed is tested for iron.

How is hemochromatosis treated?

Once the diagnosis of hemochromatosis is confirmed, treatment is simple and involves a procedure called "therapeutic phlebotomy" or "blood-letting." This is done by removing blood each week until the excess iron stores are reduced to a normal level. This procedure is the same one used for blood donation and can take as long as 6 to 12 months of weekly phlebotomy to fully deplete the excess iron stores. Once the excess iron stores are depleted, then patients should have "maintenance phlebotomy" every 2 to 4 months for the rest of their lives.

Can hemochromatosis be confused with other liver diseases?

Patients with various types of liver disease or certain other conditions can have abnormal blood iron studies. The only way to definitively diagnose hemochromatosis is by way of liver biopsy.

Should family members be screened?

Since hemochromatosis is an inherited disorder, once the disease has been treated, it is recommended that all first-degree relatives (e.g., brothers, sisters, parents, children) be screened for hemochromatosis with routine blood iron tests.

Summary

Hemochromatosis is a common disorder. It can be easily identified before there are any complications and can be treated in a safe and inexpensive manner.

Inflammatory Bowel Disease

by Harris R. Clearfield, M.D., FACG & Christopher J. Gostout, M.D., FACG

- * What is the difference between ulcerative colitis and Crohn's Disease?
- * How is IBD different from Irritable Bowel Syndrome?
- * What is the cause of IBD?
- * Is IBD caused by stress?
- * How is IBD diagnosed?
- * What are the complications of IBD?
- * What medical treatments are available for IBD?
- * Are there complications from the medical treatments?
- * Is diet management important for patients with IBD?
- * How successful is medical therapy?
- * What are surgical options for IBD?

What is the difference between ulcerative colitis and Crohn's Disease?

Ulcerative colitis and Crohn's disease are two types of Inflammatory Bowel Disease (IBD). The large intestine (colon) can be inflamed in ulcerative colitis, involving the inner lining of the colon, or by Crohn's disease, which extends the inflammation deeper into the intestine wall. Crohn's disease can also involve the small intestine (ileitis), or can involve both the small and large intestine (ileocolitis).

How is IBD different from Irritable Bowel Syndrome?

IBD is a true inflammation of the intestine which can result in bleeding, fever, elevation of the white blood cell count, as well as diarrhea and cramping abdominal pain. The abnormalities in IBD can be visualized by barium x-ray or colonoscopy. Irritable Bowel Syndrome (IBS) is a set of symptoms resulting from spasm or abnormal function of the small and large bowel. The Irritable Bowel Syndrome is characterized by crampy abdominal pain, diarrhea, and/or constipation, but is not accompanied by fever, bleeding or an elevated white blood cell count. Examination by colonoscopy or barium x-ray reveals no abnormal findings.

What is the cause of IBD?

There is no single explanation for the development of IBD. A prevailing theory holds that a process, possibly viral, bacterial, or allergic, initially inflames the small or large intestine and, depending on genetic predisposition, results in the development of antibodies which chronically "attack" the intestine, leading to inflammation. Approximately 10 percent of patients with IBD have a close family member (parent, sibling, child) with the disease.

Is IBD caused by stress?

Emotional stress due to family, job or social pressures may result in worsening of the Irritable Bowel Syndrome but there is little evidence to suggest that stress is a major cause for ulcerative colitis or Crohn's disease.

How is IBD diagnosed?

Examination of the colon by colonoscopy is commonly performed in order to determine the presence of ulcerative colitis or Crohn's colitis and is also helpful in judging the severity and extent of the disease. The examination requires that your colon be cleansed with one of several laxative preparations. Sufficient sedation is given to keep you comfortable during the procedure. A flexible tube is inserted into the rectum and advanced through the colon. Biopsies of the bowel lining are usually performed for diagnostic purposes and color photographs are often obtained so that comparison with previous or future examinations can be accomplished.

Barium x-rays of the upper and lower gastrointestinal tracts are also useful for establishing the diagnosis. The barium is administered by mouth or rectally and x-rays are obtained in order to determine if the small intestine or colon are abnormal.

What are the complications of IBD?

Ulcerative colitis may lead to chronic bleeding, diarrhea, and anemia. Crohn's disease sometimes result in progressive narrowing of the small intestine leading to increasing crampy abdominal pain and possibly abscess formation, the accumulation of pus outside the intestine. Crohn's disease may cause persistent diarrhea and fever and bleeding.

What medical treatments are available for IBD?

Various formulations of 5-ASA, a drug which has been used to treat IBD for over 50 years, are available as oral preparations, suppositories, and enemas. These are often one of the first drugs used to treat IBD.

Corticosteroid therapy, such as prednisone or hydrocortisone, are given when the 5-ASA products are insufficient to control inflammation. These drugs can be given orally, rectally as suppositories or enemas, or intravenously.

If you do not respond adequately to these programs, drugs which suppress the body's ability to make antibodies against the disease (known as anti-immune therapy) are used. Azathioprine and 6-mercaptopurine (6-MP) are the two most commonly used drugs for anti-immune therapy.

Are there complications from the medical treatments?

Sulfasalazine, the initial 5-ASA product, may cause nausea, indigestion or headache in about 15 percent of patients. The newer drugs have fewer side effects. Chronic corticosteroid therapy can lead to fluid retention and high blood pressure, some rounding of the face and softening of the bones similar to osteoporosis. These complications usually prompt attempts to discontinue corticosteroid treatment as soon as possible. The anti-immune drugs require periodic monitoring of the blood count since some patients will develop a low white blood cell count. These drugs, however, are usually well-tolerated, in many patients.

Is diet management important for patients with IBD?

Physicians prefer to maintain good nutrition for those diagnosed with IBD. If you are responding well to medical management you can often eat a reasonably unrestricted diet. A low-roughage diet is often suggested for those prone to diarrhea after meals. If you appear to be milk sensitive (lactose intolerant), you are advised to either avoid milk products or use milk to which the enzyme lactase has been added.

How successful is medical therapy?

Early and proper treatment often results in considerable improvement in your comfort. Most patients with treated IBD are productive and functioning individuals. A small percentage of those with ulcerative colitis and a larger percentage of those with Crohn's disease will eventually require surgery.

What are surgical options for IBD?

Crohn's disease of the small or large intestine can be treated surgically for complications such as obstruction, abscess, or failure to respond adequately to treatment. The disease may recur at some time after the operation.

Ulcerative colitis is cured after the entire colon is removed. This surgery, in the past, required an ileostomy (the lower small intestine is brought out to the abdominal wall and an appliance is worn to collect the output). A recent surgical procedure which avoids the need for an external appliance has become popular.

Irritable Bowel Syndrome

by Jamie S. Barkin, M.D., FACP & Barbara L. O'Brien, M.D.

- * What is it?
- * What can be done to help?
- * Visit a doctor
- * Reduce stress
- * Watch your diet
- * Medications

What is it?

Irritable Bowel Syndrome (IBS) is a cluster of symptoms, consisting most commonly of abdominal pain, bloating, constipation, and diarrhea. Some IBS patients experience alternating diarrhea and constipation. There may be mucus present around or within the stool.

IBS is best defined by what it is NOT! It is not an anatomical or structural defect. It is not an identifiable physical or chemical disorder. It is not a cancer and will not cause cancer. It will not cause other gastrointestinal diseases.

IBS is a functional disorder of the intestine. There is no sign of the disease that can be seen or measured, but the intestine is not functioning normally. It is common, occurring in about one in five Americans, more commonly in women, and more often at times of emotional stress. It usually begins in late adolescence or early adult life and rarely appears for the first time after the age of 50.

What can be done to help?

Visit a Doctor

Talking with your doctor about your problem is the first helpful step, because we all fear the unknown. Your doctor may order a series of tests to make sure there is no underlying disease that is the cause of your symptoms. If your doctor determines that you have IBS, there are measures to help you live with IBS and treat your symptoms. While the cause of IBS is not known, and there is no cure, there are several ways to manage the symptoms.

Reduce Stress

Try to reduce stress and conflict in your life. You may need to learn about relaxation techniques, participate in regular exercise or a hobby you enjoy, or attend counseling sessions to help control the stressful situations in your life.

Watch your Diet

Avoid or limit the amount of gas-producing foods such as beans, onions, broccoli, cabbage, or any other foods that you know will commonly aggravate your IBS symptoms. Try to slow down and enjoy your food at mealtimes to prevent swallowing too much air. Chewing gum may lead to swallowing air. Drinking carbonated drinks (colas, pop, soda) can introduce gas into the intestines and cause abdominal pain. Avoid skipping meals or overloading at one sitting. Intolerance to milk sugar, lactose, is seen in up to 40 percent of patients with IBS. Avoiding dairy products may be very helpful in reducing symptoms of IBS. The addition of wheat bran or other fiber may be suggested by your doctor in an attempt to decrease your symptoms. Whatever changes you make in your diet, do it gradually to give your body time to adjust.

Medications

Medications can decrease your symptoms of Irritable Bowel Syndrome. Fiber supplements may be used for control of diarrhea or constipation. Laxatives may be prescribed for constipation. If you have diarrhea, your doctor may prescribe drugs to decrease the number of bowel movements. In patients with abdominal pain, drugs which relieve spasm or tranquilizers may be prescribed to relieve symptoms. Antidepressant and mood elevating drugs may also be helpful.

Remember, IBS is not life-threatening and will not lead to other serious diseases. Most patients can be helped if they work with and follow the recommendations of their doctors.

Viral Liver Disease

by William D. Carey, M.D., FACP & Clifford S. Melnyk, M.D., FACP

- * The liver and its function
- * What is hepatitis?
- * What are the symptoms?
- * What difference does it make which virus I have?
- * How is hepatitis spread?
- * What can be done to prevent hepatitis?
- * How is hepatitis treated?
- * What are the long-term consequences of hepatitis?
- * Conclusions

The Liver and Its Functions

The liver, the body's largest organ weighing about three pounds, is located on the right side of the abdomen, protected by the lower rib cage. It is responsible for over 5,000 life-sustaining functions, produces most of the building blocks used by the rest of the body and removes harmful chemicals. The liver produces bile that is transported to the small intestine to aid in the digestive process. The liver also produces proteins, hormones and enzymes that keep the body functioning normally, as well as materials that help in normal clotting of the blood, and to cleanse the body of substances that would otherwise be poisonous. It has a role in the processing of cholesterol, maintenance of blood sugars levels, and the processing of drugs.

When the liver becomes diseased, it may have many serious consequences. Viral infections are the most common diseases to affect the liver. When a virus damages a liver cell, the cell can no longer function. With fewer healthy cells to carry on their important work, many body functions can be affected.

What is Hepatitis?

Hepatitis means inflammation of the liver. There are many reasons for the liver to be inflamed, and not all of them are due to viruses. Certain toxic drugs and immune disorders may cause liver inflammation. The most common cause for liver inflammation is viral hepatitis. When liver inflammation is present for more than 6 months, the condition is referred to as chronic hepatitis.

In the United States: There will be 500,000 new cases of viral hepatitis this year. More than 4.5 million Americans have chronic viral hepatitis. That is nearly 2 percent of the United States population. Chronic viral hepatitis, well tolerated in many, may result in premature death from cirrhosis or liver cell cancer and is a leading indication for liver transplantation.

What are the symptoms?

Symptoms produced by viral hepatitis are varied and differ depending upon whether the hepatitis is acute or chronic. Many cases of acute hepatitis are so mild that there may be no symptoms or only non-specific "flu-like" symptoms for a few days or weeks.

Symptoms of Viral Hepatitis

Acute hepatitis refers to inflammation of the liver and symptoms which are more short-term and sporadic. Acute hepatitis is less likely than chronic hepatitis to result in permanent damage to liver function.

Acute Hepatitis

Chronic Hepatitis

Severe Fatigue

Fatigue

Yellow Eyes

Joint Aches

Yellow Skin

Skin Rashes

Dark Urine

Loss of Memory

Low grade fevers

GI Upset

Note: many patients with either acute or chronic hepatitis have NO SYMPTOMS, and symptoms are not a reliable means of knowing if progressive liver damage is occurring.

There are currently seven viruses known which cause liver inflammation. They are called hepatitis A, B, C, D, E, F and G. Because of this terminology, they are commonly referred to as an "alphabet soup" of names.

What difference does it make which virus I have?

There are several important differences in the viruses. For example, the most common viral hepatitis is hepatitis A. This virus produces acute hepatitis, but never chronic disease, so the individual infected may get sick for a few days or weeks, but once improvement occurs, the infection is over, and progressive destruction of the liver does not take place. It is rare for hepatitis A to become so severe that death (or need for urgent liver transplantation) occurs.

Hepatitis B gets better spontaneously in over 95 percent of cases. Only a few individuals with this infection are likely to develop chronic disease. An important exception to this rule applies to children. The younger the child at the time of infection, the more likely the infection will become chronic. For example, when the infection is acquired in infancy, more than 90 percent of cases become chronic. The majority of hepatitis B infections in this country occur in late-adolescents and adults. However, world-wide, infants are most likely to get hepatitis B infections.

Hepatitis C occurs primarily in late adolescents and in adults. Unlike hepatitis B, this infection ordinarily escapes the body's immune system and so in most cases does not resolve itself. In fact, up to 85 percent of people who get infected with hepatitis C will retain evidence of infection indefinitely.

Hepatitis D is a strange virus. It occurs only in conjunction with hepatitis B where it seems to function as a parasite. It may turn a smoldering but well-tolerated B infection into a more aggressive and destructive disease.

The other three hepatitis viruses -- E, F, and G are not common among individuals residing in the United States.

How is hepatitis spread?

There are important differences in the ways viruses which cause hepatitis are spread. These differences hold the key to reducing the spread of these infections within families or communities.

Hepatitis A is frequently a childhood illness. It is passed from person-to-person. The virus is shed in the stool, and so poor hygiene after using the toilet can easily spread the virus from individual to individual. The virus also finds its way into food. It is easy to understand how nurseries and pre-schools are particularly vulnerable to the spread of hepatitis A.

Hepatitis B is spread via many routes, but hardly ever by ingestion of contaminated food. Instead, shared blood or body secretions are the primary means of infection. Nearly all body secretions may contain hepatitis B virus, so that spread from one person to another may be

seen in IV drug users who share needles, and also in those who receive tattoos or body piercing using improperly sterilized equipment.

Sexual transmission is another common means of spreading of hepatitis B. Infected mothers are particularly likely to spread hepatitis B to their newborns. All pregnant women are tested for hepatitis B which has helped to eliminate most mother-to-offspring transmission of hepatitis B.

The spread of Hepatitis C is also via contaminated body fluids, so that shared needles, tattooing, and body piercing may result in the spread of Hepatitis C. There is some evidence indicating that Hepatitis C may occasionally be spread by sexual contact, but this is not a common mode of transmission. Spread of Hepatitis C from mother to offspring is another somewhat uncertain area. It does not occur to nearly the same extent as spread of Hepatitis B, yet may occur in about 5 percent of infected mothers.

What can be done to prevent Hepatitis?

The means to prevent most cases of hepatitis are at hand. For some viruses it is even possible to immunize against infection. What is available for prevention of hepatitis A, B, and C?

Spread of Hepatitis A can be prevented through good personal hygiene, thorough education of all food handlers, good sanitary care within nurseries and pre-schools and immunization. An effective vaccine was introduced in 1995. It is recommended mainly for travelers to areas where Hepatitis A is a problem, and for military recruits. In time, it will likely become a standard childhood immunization.

In the case of exposure to a person with Hepatitis A the first rule is: don't panic. This advice is particularly hard for parents of an exposed child. The chances of spread from child-to-child within schools is remote except in day care centers for the very young. In those cases, immunization if done promptly may reduce the likelihood of disease. For families with an active infection, again the likelihood of spread is low. In fact, once the individual develops obvious disease, the virus has usually disappeared from the stool, and so the risk of further exposure and transmission through that route is curtailed. Nevertheless, it is a good practice to use separate eating utensils for a few days after the onset of symptoms. Immunization of household contacts may also be considered where there has been direct contact with the infected person. Immunization is not necessary for those who work in the same office or attend school where an individual develops Hepatitis A.

Hepatitis B is a completely preventable disease. Good prenatal care, immunization of all school age children against Hepatitis B, and individuals with multiple sexual partners, (or a partner identified as having Hepatitis B) are all important strategies to prevent hepatitis B.

Hepatitis C prevention remains more difficult. There is no vaccine and experts predict it will be many years before one is developed. Risk reduction remains the cornerstone of prevention. Do not share IV needles, get tattoos or body piercing in establishments where standards of cleanliness are unknown, or have unprotected sex with multiple partners.

How is Hepatitis treated?

Treatment of viral hepatitis depends upon the particular culprit virus, and upon whether the infection is acute or chronic. For acute infections of hepatitis A, B, and C, general measures to make the individual more comfortable are all that is necessary. Hepatitis A will virtually "always" get better. Follow-up is needed in cases of hepatitis B and C via blood tests, because symptoms are not a reliable sign regarding the presence of chronic infection.

For chronic viral Hepatitis B and C no certain cure exists, but for a minority of patients antiviral therapy will arrest the infection. The only drugs approved by the Food & Drug Administration for use against viral hepatitis are interferons which must be given by injection (like insulin for diabetics) for many months and may produce side effects.

What are the long term consequence of Hepatitis?

Many patients with chronic Hepatitis B or C who receive no treatment (or in whom it proves unhelpful) may nonetheless have a good chance to recover reasonably well. In fact, in the U.S. where infection is usually acquired after childhood, the majority of infected individuals may have either no long term bad consequences, or only mild or moderately troublesome symptoms.

In cases of chronic hepatitis where infection has been present for 20 years or more, signs and symptoms of a badly scarred liver may emerge in 15-30 percent of these patients. The disease may produce such severe problems that death may ensue or may only be avoided by liver transplantation.

While liver cancer most often spreads from some other site in the body, sometimes liver cancer will originate from liver cells rather than from another organ. These tumors are called hepatomas. Approximately 70 percent of hepatomas in the United States arise in the setting of chronic hepatitis B or C.

Conclusions

It is clear that viral hepatitis is a substantial health threat in the U.S. Through education, much more can be done to reduce the spread of these diseases. Treatment for those chronically infected is available and should be considered on an individual basis.

Alcoholic Liver Disease

by: Joseph F. Hacker III, M.D., FACP, Robyn G. Karlstadt, M.D., FACP, Rowen K. Zetterman, M.D., FACP & K. Rajender Reddy, M.D., FACP

- * Does alcoholism cause liver disease?
- * How much alcohol must I drink to damage my liver?
- * Why are women more susceptible to alcohol than men?
- * What kinds of liver disease are caused by excess alcohol ingestion?
- * Fatty liver
- * Alcoholic hepatitis
- * Alcohol-induced cirrhosis
- * How can you diagnose whether a person has a fatty liver, alcoholic hepatitis, or cirrhosis?
- * Are there complications associated with alcoholic liver disease?
- * Will alcoholic liver disease affect me when taking medicine?
- * How is alcohol-related liver disease treated?

Alcoholism is a common problem with an estimated 17 to 20 million Americans suffering from alcoholism. Men are more commonly afflicted than women. Young men with a family history of alcoholism and difficulties with inter-personal relations are at the greatest risk for alcoholism. Specific biologic markers for the risk to develop alcoholism have not been identified.

Does alcoholism cause liver disease?

Most people who consume alcohol do not suffer clinically significant damage to the liver. However, chronic excessive consumption of alcohol can cause a variety of liver problems including excess fat in the liver (fatty liver), alcoholic hepatitis (inflammation in the liver) and cirrhosis (permanent scarring of the liver).

Alcoholic hepatitis and alcoholic cirrhosis develop in approximately 15-20 percent of chronic alcoholics. This means that roughly one out of five people with heavy alcohol consumption will develop the devastating health problem of liver cirrhosis. These patients may die from liver failure, caused by gastrointestinal hemorrhage, infection, or failure of the kidneys. A liver transplant is only offered to those who abstain from alcohol intake for several months.

Why some people who drink alcohol get liver disease and others do not is not fully understood, but there is some research suggesting a possible genetic connection. Some people are genetically more susceptible to the effects of alcohol than others. Unfortunately, there is not yet a laboratory test to identify who is at highest risk for alcoholic related liver disease.

In the United States, cirrhosis is among the 7 leading causes of death. The most common cause of cirrhosis is alcohol abuse. In addition, excess alcohol consumption increases the risk of pan-

creatitis (inflammation of the pancreas), cardiomyopathy (damage to the heart muscle), trauma (accidents occurring drunkenness), and the development of fetal alcohol syndrome (damage to the unborn child from excess alcohol during pregnancy).

How much alcohol must I drink to damage my liver?

The amount of alcohol consumed before liver damage occurs is extremely variable. Some people are exquisitely sensitive to the effects of alcohol, while others are seemingly invulnerable to its harmful effects. In general the greater the amount and the longer the duration of alcohol consumption the more likely that injury to the liver will occur. Women are more susceptible to the damaging effects of alcohol than men.

Daily consumption of one pint of wine, or three 12 ounce beers or 4 ounces of distilled spirits (vodka, whiskey) is about 20-40 grams of alcohol and will result in liver damage over time in most women. A man drinking 80 grams of alcohol daily will, on average, develop cirrhosis of the liver in 10 years. A woman drinking 80 grams daily of alcohol will develop cirrhosis in 5 years.

Why are women more susceptible to alcohol than men?

The answer to this question is not known. When the amount of alcohol consumed by men and women is adjusted for differences in body size, women still appear to be at greater risk of liver damage at lower quantities of alcohol. Women have lower levels of an enzyme known as alcohol dehydrogenase, found in the stomach lining. This enzyme breaks down alcohol before it is absorbed and decreases the concentration of alcohol that reaches the blood stream. This may also explain why some women feel the effects of alcohol at a smaller amount of alcohol when compared to men. The important message is, "liver damage occurs in women with consumption of lesser amounts of alcohol."

What kinds of liver disease are caused by excess alcohol ingestion?

Fatty Liver

This condition can occur with significant intake of alcohol, even in individuals who are not alcoholics. In fatty liver, large fat droplets accumulate in the liver, leading to enlargement. A blood test can identify early damage to the liver. When alcohol consumption is stopped, the fat in the liver will disappear and the liver should completely heal.

Alcoholic Hepatitis

This is a serious condition where the liver has been severely damaged by the effects of alcohol. The illness is characterized by weakness, fever, loss of appetite, nausea, vomiting and pain over the liver. The liver is often inflamed causing many individual liver cells to die. Unlike fatty liver, alcoholic hepatitis often heals with permanent scarring called fibrosis. The right sided stomach pain is often hard to distinguish from other conditions such as a gallbladder attack. Your doctor may need to order special blood tests and x-rays to diagnose the condition. Alcoholic hepatitis can be life-threatening and require hospitalization. Recovery from alcoholic hepatitis is common, but the fibrosis or scarring of the liver is irreversible.

Alcohol-Induced Cirrhosis

This is the final stage of damage to the liver from alcohol. Cirrhosis is a permanent irreversible form of liver damage. The fibrosis or scarring of the liver seen in cirrhosis leads to obstruction of blood flow through the liver. This prevents the liver from performing its critical functions of purifying the blood and nutrients absorbed from the intestines. The end result is liver failure. Some signs of liver failure include accumulation of fluid in the abdomen (ascites), malnutrition, confusion (encephalopathy) and bleeding from the intestines. Some of these conditions can be managed by diet, medicines and special procedures, but the spontaneous recovery of the liver to normal and return of good health is rare.

Cirrhosis is the seventh leading cause of death in the United States. Although alcohol is the cause of over half of the cases of cirrhosis in the United States, not all cases of cirrhosis are due to alcoholism. Some are caused by genetic disorders, such as hemochromatosis or viral infections, such as hepatitis.

How can you diagnosis whether a person has a fatty liver, alcoholic hepatitis, or cirrhosis?

Blood tests and scans are usually very helpful in the evaluation of the liver, but a biopsy of the liver is often required to make the diagnosis of cirrhosis and determine the cause. A liver biopsy is performed in the hospital or in a same day surgery clinic. Often the liver biopsy is performed with mild local anesthesia such as lidocaine or with mild sedatives given through the vein. The discomfort from the liver biopsy is usually mild and lasts only for a short time. Most patients can return to work the following day with only a restriction on heavy lifting and exercise.

Are there complications associated with alcoholic liver disease?

Yes, roughly a third of patients with alcoholic liver disease suffer from a liver infection caused

by the hepatitis C virus and nearly half will have gallstones. Those with cirrhosis are more likely to suffer from diabetes, kidney problems, ulcers, and severe bacterial infections.

Will alcoholic liver disease affect me when taking medicine?

Since one of the functions of the liver is to process drugs and other chemicals in your body, if you have liver disease you may process medications differently from the other people. Always consult with your doctor about the dosage of both over-the-counter and prescription medicines. Similarly, alcohol alone, even without liver disease known to be present, may affect the processing of certain medications. For example, even moderate amounts of alcohol may cause adverse effects with some pain medications. If you use alcohol, check the labeling of over-the-counter medications to alert yourself to any limitations on their usage. You should check with your physician about precautions in taking your prescription medications if you have been drinking any alcohol. You should never use an alcoholic beverage to take medication.

How is alcohol-related liver disease treated?

Of all treatments for alcoholic liver disease, the most important is to stop drinking completely. Sometimes the liver can recover from the injury of alcohol enough to allow a normal life, unfortunately the scarring of the liver is permanent and the liver remains vulnerable to any alcohol or infections.

When alcoholic cirrhosis advances to an end-stage complicated by life-threatening intestinal bleeding, confusion, ascites, failure of the kidneys, and infection, the only treatment is liver transplantation. For liver transplantation to be successful, a patient must be very compliant with medicines and follow instructions reliably. Only persons completing a successful alcohol detoxification and rehabilitation program are considered as candidates for liver transplantation.

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