

ADULT LIVER CANCER

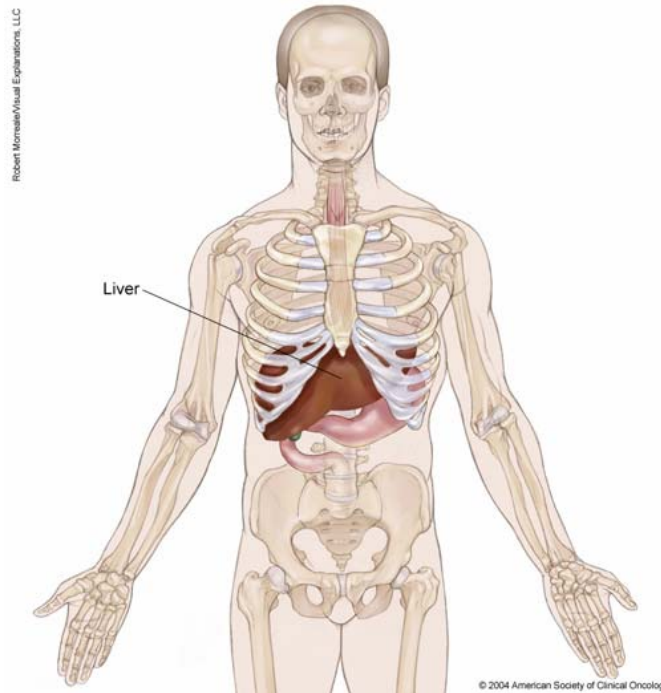
Primary liver cancer is a disease in which cells become abnormal and multiply without control or order and form a malignant tumor in the tissues of the liver. The liver is one of the largest organs in the body, filling the upper right side of the abdomen inside the rib cage. It has two parts, a right lobe and a smaller left lobe. The liver filters harmful substances from the blood to be passed from the body in stools and urine. It also makes bile to help digest fats from food and stores glycogen (sugar), which the body uses for energy. The liver is also a common site of spread from other cancers, called metastatic disease.

RISK FACTORS for liver cancer include:

- *Having hepatitis B and/or hepatitis C
- *Having a close relative with both hepatitis and liver cancer
- *Having cirrhosis or liver failure
- *Eating foods tainted with aflatoxin (poison from a fungus that can grow on foods, such as grains and nuts, that have not been stored properly)

SYMPTOMS TO REPORT include:

- *A hard lump or discomfort on the right side just below the rib cage
- *Pain around the right shoulder blade
- *Unexplained weight loss
- *Jaundice (yellowing of the skin and whites of the eyes)
- *Unusual tiredness
- *Nausea
- *Loss of appetite
- *Swelling of the abdomen (from fluid)



STAGES

- Stage I:** There is only one tumor and it has not spread to nearby blood vessels
- Stage II:** There is only one tumor that has spread to nearby blood vessels
OR there is more than one tumor, but none of them are larger than 5 centimeters
- Stage IIIA:** There is more than one tumor larger than 5 centimeters
OR one tumor has spread to a major branch of blood vessels near the liver
- Stage IIIB:** Cancer has spread to nearby organs other than the gallbladder
OR the cancer has broken through the lining of the peritoneal cavity
(the area in the abdomen with the stomach, intestines and liver)
- Stage IIIC:** Cancer has spread to nearby lymph nodes
- Stage IV:** Cancer has spread to tissues beyond the liver to other places in the body

DIAGNOSING AND STAGING

The following tests and procedures may be used to diagnose liver cancer and determine the stage of the disease. Staging is the process of finding out if the cancer has spread to other parts of the body. It helps to determine the correct treatment.

Physical exam of entire body, including health habits and past illnesses and treatments

Serum tumor marker test to check blood levels of alpha-fetoprotein (a substance made by the cancer), and liver tests to evaluate underlying liver function

Fine needle aspiration biopsy is the removal of tissue samples to look for signs of cancer

Ultrasound bounces high-energy sound waves off of internal tissues or organs to make a video image of the inside of the body

Doppler ultrasound measures the speed and direction of blood flow

Computerized Tomography (CT) scans of the chest, abdomen and pelvis produce images of the size and location of tumors and metastases, or places where tumors have spread

Bone scan is a procedure to check for signs of cancer spreading to the bones

Magnetic Resonance Imaging (MRI) uses radio wave pulses to make images of spatial variations in the absorption and emission of energy between healthy tissue and tumors

Positron emission tomography (PET) scan uses radioactive sugar molecules injected intravenously.

Cancer cells absorb sugar more quickly than normal cells, so they "light up" on the scan

Laparoscopy is a surgical procedure that only requires small incisions and uses a thin, lighted tube to examine organs inside of the abdomen to check for signs of disease. Organs and tissue samples for biopsy can also be removed during this procedure

TREATMENT OPTIONS

Certain factors affect the chance of recovery and the choices for treatment. These include the size, number of tumors and location of the cancer, whether the cancer has spread outside the liver, how well the liver is working, and the patient's general health. The level of alpha-fetoprotein and whether or not there is cirrhosis of the liver are also factors in available treatments. Many patients with this diagnosis have moderate to advanced cirrhosis. Surgery, radiation therapy, chemotherapy and biologic therapy may be used to treat liver cancer. Palliative therapy for advanced liver cancer includes radiation therapy, chemotherapy or both. The goal is to slow the progress of the disease and make the patient more comfortable. Palliative care can reduce pain, control symptoms, and improve quality of life.

Surgery is most successful in patients with small tumors and tumors confined to one lobe or side of the liver. Surgery may not be an option if the tumor invades important blood vessels, involves both sides of the liver, or the tumor has spread outside of the liver. Surgery is not possible if the patient has significant cirrhosis of the liver. Surgery remains the single most effective treatment modality in patients where removal of the liver is possible. Two types of surgery are possible. **Hepatectomy** is the removal of a portion of the liver. It is performed only if the cancer is limited to one part of the liver and the liver is functioning well. It can not be performed if the liver has advanced cirrhosis. **Liver transplant** is possible when the cancer is only in the liver, a suitable donor is found, and very specific criteria are fulfilled. These criteria include the presence of only very small tumors, and no more than three tumor "spots." It is effective for patients with small tumors; however, there are only a limited number of donors. Long waiting periods until a liver becomes available mean that the cancer may progress while waiting for a transplant.

Radiation therapy uses high-energy x-rays to kill cancer cells. External radiation therapy uses a machine outside of the body to send radiation toward the cancer. It is uncommonly used for liver cancer because the liver is naturally intolerant of radiation. Internal radiation therapy (brachytherapy) uses tiny glass beads that are injected into the liver through the liver's blood vessels and radiate the tumor from within.

Chemotherapy uses drugs taken by mouth or injections through a vein or muscle to stop the growth of cancer cells. The way that chemotherapy is given depends on the type and stage of cancer being treated. Chemotherapy can be one or a combination of drugs. **Biologic therapy** is a treatment that uses the patient's immune system to fight cancer. Substances made by the body or in a laboratory are used to boost, direct, or restore the body's natural defenses against cancer.