Gallbladder Cancer Treatment (PDQ®)

Patient Version

Last Modified: 04/23/2014

Table of Contents

General Information About Gallbladder Cancer

Stages of Gallbladder Cancer

Treatment Option Overview

Treatment Options for Gallbladder Cancer
   Localized Gallbladder Cancer
   Unresectable, Recurrent, or Metastatic Gallbladder Cancer

To Learn More About Gallbladder Cancer

Changes to This Summary (04/23/2014)

About This PDQ Summary
   About PDQ
   Purpose of This Summary
   Reviewers and Updates
   Clinical Trial Information
   Permission to Use This Summary
   Disclaimer
   Contact Us

Get More Information From NCI

General Information About Gallbladder Cancer

Key Points for This Section

- Gallbladder cancer is a disease in which malignant (cancer) cells form in the tissues of the
gallbladder.

- Being female can increase the risk of developing gallbladder cancer.
- Signs and symptoms of gallbladder cancer include jaundice, fever, and pain.
- Gallbladder cancer is difficult to detect (find) and diagnose early.
- Tests that examine the gallbladder and nearby organs are used to detect (find), diagnose, and stage gallbladder cancer.
- Certain factors affect the prognosis (chance of recovery) and treatment options.

**Gallbladder cancer is a disease in which malignant (cancer) cells form in the tissues of the gallbladder.**

Gallbladder cancer is a rare disease in which malignant (cancer) cells are found in the tissues of the gallbladder. The gallbladder is a pear-shaped organ that lies just under the liver in the upper abdomen. The gallbladder stores bile, a fluid made by the liver to digest fat. When food is being broken down in the stomach and intestines, bile is released from the gallbladder through a tube called the common bile duct, which connects the gallbladder and liver to the first part of the small intestine.

Anatomy of the gallbladder. The gallbladder is just below the liver. Bile is stored in the gallbladder and flows through the cystic duct and the common bile duct into the small intestine when food is being digested.
The wall of the gallbladder has 3 main layers of tissue.

- Mucosal (inner) layer.
- Muscularis (middle, muscle) layer.
- Serosal (outer) layer.

Between these layers is supporting connective tissue. Primary gallbladder cancer starts in the inner layer and spreads through the outer layers as it grows.

**Being female can increase the risk of developing gallbladder cancer.**

Anything that increases your chance of getting a disease is called a risk factor. Having a risk factor does not mean that you will get cancer; not having risk factors doesn't mean that you will not get cancer. Talk with your doctor if you think you may be at risk. Risk factors for gallbladder cancer include the following:

- Being female.
- Being Native American.

**Signs and symptoms of gallbladder cancer include jaundice, fever, and pain.**

These and other signs and symptoms may be caused by gallbladder cancer or by other conditions. Check with your doctor if you have any of the following:

- Jaundice (yellowing of the skin and whites of the eyes).
- Pain above the stomach.
- Fever.
- Nausea and vomiting.
- Bloating.
- Lumps in the abdomen.

**Gallbladder cancer is difficult to detect (find) and diagnose early.**

Gallbladder cancer is difficult to detect and diagnose for the following reasons:

- There are no signs or symptoms in the early stages of gallbladder cancer.
- The symptoms of gallbladder cancer, when present, are like the symptoms of many other illnesses.
- The gallbladder is hidden behind the liver.

Gallbladder cancer is sometimes found when the gallbladder is removed for other reasons. Patients with gallstones rarely develop gallbladder cancer.

**Tests that examine the gallbladder and nearby organs are used to detect (find), diagnose, and stage gallbladder cancer.**

Procedures that make pictures of the gallbladder and the area around it help diagnose gallbladder cancer.
and show how far the cancer has spread. The process used to find out if cancer cells have spread within and around the gallbladder is called staging.

In order to plan treatment, it is important to know if the gallbladder cancer can be removed by surgery. Tests and procedures to detect, diagnose, and stage gallbladder cancer are usually done at the same time. The following tests and procedures may be used:

- **Physical exam and history**: An exam of the body to check general signs of health, including checking for signs of disease, such as lumps or anything else that seems unusual. A history of the patient’s health habits and past illnesses and treatments will also be taken.

- **Liver function tests**: A procedure in which a blood sample is checked to measure the amounts of certain substances released into the blood by the liver. A higher than normal amount of a substance can be a sign of liver disease that may be caused by gallbladder cancer.

- **Carcinoembryonic antigen (CEA) assay**: A test that measures the level of CEA in the blood. CEA is released into the bloodstream from both cancer cells and normal cells. When found in higher than normal amounts, it can be a sign of gallbladder cancer or other conditions.

- **CA 19-9 assay**: A test that measures the level of CA 19-9 in the blood. CA 19-9 is released into the bloodstream from both cancer cells and normal cells. When found in higher than normal amounts, it can be a sign of gallbladder cancer or other conditions.

- **Blood chemistry studies**: A procedure in which a blood sample is checked to measure the amounts of certain substances released into the blood by organs and tissues in the body. An unusual (higher or lower than normal) amount of a substance can be a sign of disease in the organ or tissue that makes it.

- **CT scan (CAT scan)**: A procedure that makes a series of detailed pictures of areas inside the body, such as the chest, abdomen, and pelvis, taken from different angles. The pictures are made by a computer linked to an x-ray machine. A dye may be injected into a vein or swallowed to help the organs or tissues show up more clearly. This procedure is also called computed tomography, computerized tomography, or computerized axial tomography.

- **Ultrasound exam**: A procedure in which high-energy sound waves (ultrasound) are bounced off internal tissues or organs and make echoes. The echoes form a picture of body tissues called a sonogram. An abdominal ultrasound is done to diagnose gallbladder cancer.

- **PTC (percutaneous transhepatic cholangiography)**: A procedure used to x-ray the liver and bile ducts. A thin needle is inserted through the skin below the ribs and into the liver. Dye is injected into the liver or bile ducts and an x-ray is taken. If a blockage is found, a thin, flexible tube called a stent is sometimes left in the liver to drain bile into the small intestine or a collection bag outside the body.

- **Chest x-ray**: An x-ray of the organs and bones inside the chest. An x-ray is a type of energy beam that can go through the body and onto film, making a picture of areas inside the body.
**ERCP (endoscopic retrograde cholangiopancreatography):** A procedure used to x-ray the ducts (tubes) that carry bile from the liver to the gallbladder and from the gallbladder to the small intestine. Sometimes gallbladder cancer causes these ducts to narrow and block or slow the flow of bile, causing jaundice. An endoscope (a thin, lighted tube) is passed through the mouth, esophagus, and stomach into the first part of the small intestine. A catheter (a smaller tube) is then inserted through the endoscope into the bile ducts. A dye is injected through the catheter into the ducts and an x-ray is taken. If the ducts are blocked by a tumor, a fine tube may be inserted into the duct to unblock it. This tube (or stent) may be left in place to keep the duct open. Tissue samples may also be taken.

**Laparoscopy:** A surgical procedure to look at the organs inside the abdomen to check for signs of disease. Small incisions (cuts) are made in the wall of the abdomen and a laparoscope (a thin, lighted tube) is inserted into one of the incisions. Other instruments may be inserted through the same or other incisions to perform procedures such as removing organs or taking tissue samples for biopsy. The laparoscopy helps to find out if the cancer is within the gallbladder only or has spread to nearby tissues and if it can be removed by surgery.

**Biopsy:** The removal of cells or tissues so they can be viewed under a microscope by a pathologist to check for signs of cancer. The biopsy may be done after surgery to remove the tumor. If the tumor clearly cannot be removed by surgery, the biopsy may be done using a fine needle to remove cells from the tumor.

**Certain factors affect the prognosis (chance of recovery) and treatment options.**

The prognosis (chance of recovery) and treatment options depend on the following:

- The stage of the cancer (whether the cancer has spread from the gallbladder to other places in the body).
- Whether the cancer can be completely removed by surgery.
- The type of gallbladder cancer (how the cancer cell looks under a microscope).
- Whether the cancer has just been diagnosed or has recurred (come back).

Treatment may also depend on the age and general health of the patient and whether the cancer is causing signs or symptoms.

Gallbladder cancer can be cured only if it is found before it has spread, when it can be removed by surgery. If the cancer has spread, palliative treatment can improve the patient's quality of life by controlling the symptoms and complications of this disease.

Taking part in one of the clinical trials being done to improve treatment should be considered. Information about ongoing clinical trials is available from the NCI Web site.

**Stages of Gallbladder Cancer**

**Key Points for This Section**
Tests and procedures to stage gallbladder cancer are usually done at the same time as diagnosis.

See the General Information section for a description of tests and procedures used to detect, diagnose, and stage gallbladder cancer.

There are three ways that cancer spreads in the body.

Cancer can spread through tissue, the lymph system, and the blood:

- Tissue. The cancer spreads from where it began by growing into nearby areas.
- Lymph system. The cancer spreads from where it began by getting into the lymph system. The cancer travels through the lymph vessels to other parts of the body.
- Blood. The cancer spreads from where it began by getting into the blood. The cancer travels through the blood vessels to other parts of the body.

Cancer may spread from where it began to other parts of the body.

When cancer spreads to another part of the body, it is called metastasis. Cancer cells break away from where they began (the primary tumor) and travel through the lymph system or blood.

- Lymph system. The cancer gets into the lymph system, travels through the lymph vessels, and forms a tumor (metastatic tumor) in another part of the body.
- Blood. The cancer gets into the blood, travels through the blood vessels, and forms a tumor (metastatic tumor) in another part of the body.
The metastatic tumor is the same type of cancer as the primary tumor. For example, if gallbladder cancer spreads to the liver, the cancer cells in the liver are actually gallbladder cancer cells. The disease is metastatic gallbladder cancer, not liver cancer.

The following stages are used for gallbladder cancer:

**Stage 0 (Carcinoma in Situ)**

In stage 0, abnormal cells are found in the inner (mucosal) layer of the gallbladder. These abnormal cells may become cancer and spread into nearby normal tissue. Stage 0 is also called carcinoma in situ.

**Stage I**

In stage I, cancer has formed and has spread beyond the inner (mucosal) layer to a layer of tissue with blood vessels or to the muscle layer.

**Stage II**

In stage II, cancer has spread beyond the muscle layer to the connective tissue around the muscle.

**Stage IIIA**

In stage IIIA, cancer has spread through the thin layers of tissue that cover the gallbladder and/or to the liver and/or to one nearby organ (such as the stomach, small intestine, colon, pancreas, or bile ducts outside the liver).

**Stage IIIB**

In stage IIIB, cancer has spread to nearby lymph nodes and:

- beyond the inner layer of the gallbladder to a layer of tissue with blood vessels or to the muscle layer; or
- beyond the muscle layer to the connective tissue around the muscle; or
- through the thin layers of tissue that cover the gallbladder and/or to the liver and/or to one nearby organ (such as the stomach, small intestine, colon, pancreas, or bile ducts outside the liver).

**Stage IVA**

In stage IVA, cancer has spread to a main blood vessel of the liver or to 2 or more nearby organs or areas other than the liver. Cancer may have spread to nearby lymph nodes.

**Stage IVB**

In stage IVB, cancer has spread to either:

- lymph nodes along large arteries in the abdomen and/or near the lower part of the backbone; or
- to organs or areas far away from the gallbladder.

For gallbladder cancer, stages are also grouped according to how the cancer
may be treated. There are two treatment groups:

Localized (Stage I)

Cancer is found in the wall of the gallbladder and can be completely removed by surgery.

Unresectable, recurrent, or metastatic (Stage II, Stage III, and Stage IV)

Unresectable cancer cannot be removed completely by surgery. Most patients with gallbladder cancer have unresectable cancer.

Recurrent cancer is cancer that has recurred (come back) after it has been treated. Gallbladder cancer may come back in the gallbladder or in other parts of the body.

Metastasis is the spread of cancer from the primary site (place where it started) to other places in the body. Metastatic gallbladder cancer may spread to surrounding tissues, organs, throughout the abdominal cavity, or to distant parts of the body.

Treatment Option Overview

Key Points for This Section

- There are different types of treatment for patients with gallbladder cancer.
- Three types of standard treatment are used:
  - Surgery
  - Radiation therapy
  - Chemotherapy
- New types of treatment are being tested in clinical trials.
  - Radiation sensitizers
- Patients may want to think about taking part in a clinical trial.
- Patients can enter clinical trials before, during, or after starting their cancer treatment.
- Follow-up tests may be needed.

There are different types of treatment for patients with gallbladder cancer.

Different types of treatments are available for patients with gallbladder cancer. Some treatments are standard (the currently used treatment), and some are being tested in clinical trials. A treatment clinical trial is a research study meant to help improve current treatments or obtain information on new treatments for patients with cancer. When clinical trials show that a new treatment is better than the standard treatment, the new treatment may become the standard treatment. Patients may want to think about taking part in a clinical trial. Some clinical trials are open only to patients who have not started treatment.
Three types of standard treatment are used:

Surgery

Gallbladder cancer may be treated with a cholecystectomy, surgery to remove the gallbladder and some of the tissues around it. Nearby lymph nodes may be removed. A laparoscope is sometimes used to guide gallbladder surgery. The laparoscope is attached to a video camera and inserted through an incision (port) in the abdomen. Surgical instruments are inserted through other ports to perform the surgery. Because there is a risk that gallbladder cancer cells may spread to these ports, tissue surrounding the port sites may also be removed.

If the cancer has spread and cannot be removed, the following types of palliative surgery may relieve symptoms:

- **Surgical biliary bypass:** If the tumor is blocking the small intestine and bile is building up in the gallbladder, a biliary bypass may be done. During this operation, the gallbladder or bile duct will be cut and sewn to the small intestine to create a new pathway around the blocked area.

- **Endoscopic stent placement:** If the tumor is blocking the bile duct, surgery may be done to put in a stent (a thin, flexible tube) to drain bile that has built up in the area. The stent may be placed through a catheter that drains to the outside of the body or the stent may go around the blocked area and drain the bile into the small intestine.

- **Percutaneous transhepatic biliary drainage:** A procedure done to drain bile when there is a blockage and endoscopic stent placement is not possible. An x-ray of the liver and bile ducts is done to locate the blockage. Images made by ultrasound are used to guide placement of a stent, which is left in the liver to drain bile into the small intestine or a collection bag outside the body. This procedure may be done to relieve jaundice before surgery.

Radiation therapy

Radiation therapy is a cancer treatment that uses high-energy x-rays or other types of radiation to kill cancer cells. There are two types of radiation therapy. External radiation therapy uses a machine outside the body to send radiation toward the cancer. Internal radiation therapy uses a radioactive substance sealed in needles, seeds, wires, or catheters that are placed directly into or near the cancer. The way the radiation therapy is given depends on the type and stage of the cancer being treated.

Chemotherapy

Chemotherapy is a cancer treatment that uses drugs to stop the growth of cancer cells, either by killing the cells or by stopping the cells from dividing. When chemotherapy is taken by mouth or injected into a vein or muscle, the drugs enter the bloodstream and can reach cancer cells throughout the body (systemic chemotherapy). When chemotherapy is placed directly into the cerebrospinal fluid, an organ, or a body cavity such as the abdomen, the drugs mainly affect cancer cells in those areas (regional chemotherapy). The way the chemotherapy is given depends on the type and stage of the cancer being treated.

New types of treatment are being tested in clinical trials.
This summary section describes treatments that are being studied in clinical trials. It may not mention every new treatment being studied. Information about clinical trials is available from the NCI Web site.

**Radiation sensitizers**

Clinical trials are studying ways to improve the effect of radiation therapy on tumor cells, including the following:

- Hyperthermia therapy: A treatment in which body tissue is exposed to high temperatures to damage and kill cancer cells or to make cancer cells more sensitive to the effects of radiation therapy and certain anticancer drugs.
- Radiosensitizers: Drugs that make tumor cells more sensitive to radiation therapy. Giving radiation therapy together with radiosensitizers may kill more tumor cells.

**Patients may want to think about taking part in a clinical trial.**

For some patients, taking part in a clinical trial may be the best treatment choice. Clinical trials are part of the cancer research process. Clinical trials are done to find out if new cancer treatments are safe and effective or better than the standard treatment.

Many of today’s standard treatments for cancer are based on earlier clinical trials. Patients who take part in a clinical trial may receive the standard treatment or be among the first to receive a new treatment.

Patients who take part in clinical trials also help improve the way cancer will be treated in the future. Even when clinical trials do not lead to effective new treatments, they often answer important questions and help move research forward.

**Patients can enter clinical trials before, during, or after starting their cancer treatment.**

Some clinical trials only include patients who have not yet received treatment. Other trials test treatments for patients whose cancer has not gotten better. There are also clinical trials that test new ways to stop cancer from recurring (coming back) or reduce the side effects of cancer treatment.

Clinical trials are taking place in many parts of the country. See the Treatment Options section that follows for links to current treatment clinical trials. These have been retrieved from NCI’s listing of clinical trials.

**Follow-up tests may be needed.**

Some of the tests that were done to diagnose the cancer or to find out the stage of the cancer may be repeated. Some tests will be repeated in order to see how well the treatment is working. Decisions about whether to continue, change, or stop treatment may be based on the results of these tests. This is sometimes called re-staging.

Some of the tests will continue to be done from time to time after treatment has ended. The results of these tests can show if your condition has changed or if the cancer has recurred (come back). These tests are sometimes called follow-up tests or check-ups.
Treatment Options for Gallbladder Cancer

Localized Gallbladder Cancer

Treatment of localized gallbladder cancer may include the following:

- Surgery to remove the gallbladder and some of the tissue around it. Part of the liver and nearby lymph nodes may also be removed. Radiation therapy with or without chemotherapy may follow surgery.
- Radiation therapy with or without chemotherapy.
- A clinical trial of radiation therapy with radiosensitizers.

Check for U.S. clinical trials from NCI’s list of cancer clinical trials that are now accepting patients with localized gallbladder cancer. For more specific results, refine the search by using other search features, such as the location of the trial, the type of treatment, or the name of the drug. Talk with your doctor about clinical trials that may be right for you. General information about clinical trials is available from the NCI Web site.

Unresectable, Recurrent, or Metastatic Gallbladder Cancer

Treatment of unresectable, recurrent, or metastatic gallbladder cancer is usually within a clinical trial. Treatment may include the following:

- Percutaneous transhepatic biliary drainage or the placement of stents to relieve symptoms caused by blocked bile ducts. This may be followed by radiation therapy as palliative treatment.
- Surgery as palliative treatment to relieve symptoms caused by blocked bile ducts.
- Chemotherapy.
- A clinical trial of new ways to give palliative radiation therapy, such as giving it together with hyperthermia therapy, radiosensitizers, or chemotherapy.
- A clinical trial of new drugs and drug combinations.

Check for U.S. clinical trials from NCI’s list of cancer clinical trials that are now accepting patients with unresectable gallbladder cancer, recurrent gallbladder cancer and metastatic gallbladder cancer. For more specific results, refine the search by using other search features, such as the location of the trial, the type of treatment, or the name of the drug. Talk with your doctor about clinical trials that may be right for you. General information about clinical trials is available from the NCI Web site.

To Learn More About Gallbladder Cancer

For more information from the National Cancer Institute about gallbladder cancer, see the Gallbladder Cancer Home Page.

For general cancer information and other resources from the National Cancer Institute, see the following:

- Cancer Staging
Changes to This Summary (04/23/2014)

The PDQ cancer information summaries are reviewed regularly and updated as new information becomes available. This section describes the latest changes made to this summary as of the date above.

Editorial changes were made to this summary.

About This PDQ Summary

About PDQ

Physician Data Query (PDQ) is the National Cancer Institute’s (NCI’s) comprehensive cancer information database. The PDQ database contains summaries of the latest published information on cancer prevention, detection, genetics, treatment, supportive care, and complementary and alternative medicine. Most summaries come in two versions. The health professional versions have detailed information written in technical language. The patient versions are written in easy-to-understand, nontechnical language. Both versions have cancer information that is accurate and up to date and most versions are also available in Spanish.

PDQ is a service of the NCI. The NCI is part of the National Institutes of Health (NIH). NIH is the federal government’s center of biomedical research. The PDQ summaries are based on an independent review of the medical literature. They are not policy statements of the NCI or the NIH.

Purpose of This Summary

This PDQ cancer information summary has current information about the treatment of gallbladder cancer. It is meant to inform and help patients, families, and caregivers. It does not give formal guidelines or recommendations for making decisions about health care.

Reviewers and Updates

Editorial Boards write the PDQ cancer information summaries and keep them up to date. These Boards are made up of experts in cancer treatment and other specialties related to cancer. The summaries are reviewed regularly and changes are made when there is new information. The date on each summary ("Date Last Modified") is the date of the most recent change.

The information in this patient summary was taken from the health professional version, which is reviewed regularly and updated as needed, by the PDQ Adult Treatment Editorial Board.
Clinical Trial Information

A clinical trial is a study to answer a scientific question, such as whether one treatment is better than another. Trials are based on past studies and what has been learned in the laboratory. Each trial answers certain scientific questions in order to find new and better ways to help cancer patients. During treatment clinical trials, information is collected about the effects of a new treatment and how well it works. If a clinical trial shows that a new treatment is better than one currently being used, the new treatment may become "standard." Patients may want to think about taking part in a clinical trial. Some clinical trials are open only to patients who have not started treatment.

Clinical trials are listed in PDQ and can be found online at NCI’s Web site. Many cancer doctors who take part in clinical trials are also listed in PDQ. For more information, call the Cancer Information Service 1-800-4-CANCER (1-800-422-6237).

Permission to Use This Summary

PDQ is a registered trademark. The content of PDQ documents can be used freely as text. It cannot be identified as an NCI PDQ cancer information summary unless the whole summary is shown and it is updated regularly. However, a user would be allowed to write a sentence such as “NCI’s PDQ cancer information summary about breast cancer prevention states the risks in the following way: [include excerpt from the summary].”

The best way to cite this PDQ summary is:


Images in this summary are used with permission of the author(s), artist, and/or publisher for use in the PDQ summaries only. If you want to use an image from a PDQ summary and you are not using the whole summary, you must get permission from the owner. It cannot be given by the National Cancer Institute. Information about using the images in this summary, along with many other images related to cancer can be found in Visuals Online. Visuals Online is a collection of more than 2,000 scientific images.

Disclaimer

The information in these summaries should not be used to make decisions about insurance reimbursement. More information on insurance coverage is available on Cancer.gov on the Coping with Cancer: Financial, Insurance, and Legal Information page.

Contact Us

More information about contacting us or receiving help with the Cancer.gov Web site can be found on our Contact Us for Help page. Questions can also be submitted to Cancer.gov through the Web site’s Contact Form.

Get More Information From NCI
Call 1-800-4-CANCER

For more information, U.S. residents may call the National Cancer Institute's (NCI's) Cancer Information Service toll-free at 1-800-4-CANCER (1-800-422-6237) Monday through Friday from 8:00 a.m. to 8:00 p.m., Eastern Time. A trained Cancer Information Specialist is available to answer your questions.

Chat online

The NCI's LiveHelp® online chat service provides Internet users with the ability to chat online with an Information Specialist. The service is available from 8:00 a.m. to 11:00 p.m. Eastern time, Monday through Friday. Information Specialists can help Internet users find information on NCI Web sites and answer questions about cancer.

Write to us

For more information from the NCI, please write to this address:

NCI Public Inquiries Office
9609 Medical Center Dr.
Room 2E532 MSC 9760
Bethesda, MD 20892-9760

Search the NCI Web site

The NCI Web site provides online access to information on cancer, clinical trials, and other Web sites and organizations that offer support and resources for cancer patients and their families. For a quick search, use the search box in the upper right corner of each Web page. The results for a wide range of search terms will include a list of "Best Bets," editorially chosen Web pages that are most closely related to the search term entered.

There are also many other places to get materials and information about cancer treatment and services. Hospitals in your area may have information about local and regional agencies that have information on finances, getting to and from treatment, receiving care at home, and dealing with problems related to cancer treatment.

Find Publications

The NCI has booklets and other materials for patients, health professionals, and the public. These publications discuss types of cancer, methods of cancer treatment, coping with cancer, and clinical trials. Some publications provide information on tests for cancer, cancer causes and prevention, cancer statistics, and NCI research activities. NCI materials on these and other topics may be ordered online or printed directly from the NCI Publications Locator. These materials can also be ordered by telephone from the Cancer Information Service toll-free at 1-800-4-CANCER (1-800-422-6237).