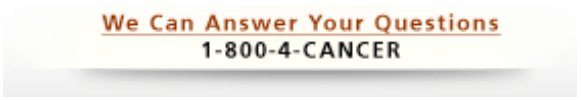
Kaposi Sarcoma Treatment (PDQ®)

Patient | Health Professional



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General Information About Kaposi Sarcoma

Key Points for This Section

Kaposi sarcoma is a disease in which malignant tumors (cancer) can form in the skin, mucous membranes, lymph nodes, and other organs.

Kaposi sarcoma is a cancer that causes lesions (abnormal tissue) to grow in the skin; the mucous membranes lining the mouth, nose, and throat; lymph nodes; or other organs. The lesions are usually purple and are made of cancer cells, new blood vessels, red blood cells, and white blood cells. Kaposi sarcoma is different from other cancers in that lesions may begin in more than one place in the body at the same time.

Human herpesvirus-8 (HHV-8) is found in the lesions of all patients with Kaposi sarcoma. This virus is also called Kaposi sarcoma herpesvirus (KSHV). Most people infected with HHV-8 do not get Kaposi sarcoma. Those infected with HHV-8 who are most likely to develop Kaposi sarcoma have immune systems weakened by disease or by drugs given after an organ transplant.

There are several types of Kaposi sarcoma, including:

Tests that examine the skin, lungs, and gastrointestinal tract are used to detect (find) and diagnose Kaposi sarcoma.

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 skin and lymph nodes 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.
- **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. This is used to find Kaposi sarcoma in the lungs.
- **Biopsy** : The removal of cells or tissues so they can be viewed under a microscope by a pathologist to check for signs of cancer.

  One of the following types of biopsies may be done to check for Kaposi sarcoma lesions in the skin:

  An endoscopy or bronchoscopy may be done to check for Kaposi sarcoma lesions in the gastrointestinal tract or lungs.

  - **Endoscopy for biopsy**: A procedure to look at organs and tissues inside the body to check for abnormal areas. An endoscope is inserted through an incision (cut) in the skin or opening in the body, such as the mouth. An endoscope is a thin, tube-like instrument with a light and a lens for viewing. It may also have a tool to remove tissue or lymph node samples, which are checked under a microscope for signs of disease. This is used to find Kaposi sarcoma lesions in the gastrointestinal tract.
  - **Bronchoscopy for biopsy**: A procedure to look inside the trachea and large airways in the lung for abnormal areas. A bronchoscope is inserted through the nose or mouth into the trachea and lungs. A bronchoscope is a thin, tube-like instrument with a light and a lens for viewing. It may also have a tool to remove tissue samples, which are checked under a microscope for signs of disease. This is used to find Kaposi sarcoma lesions in the lungs.

After Kaposi sarcoma has been diagnosed, tests are done to find out if cancer cells have spread to other parts of the body.

The following tests and procedures may be used to find out if cancer has spread to other parts of the body:

- **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 lung, liver, and spleen, 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.
- **PET scan (positron emission tomography scan)** : A procedure to find malignant tumor cells in the body. A small amount of radioactive glucose (sugar) is injected into a vein. The PET scanner rotates around the body and makes a picture of where glucose is being used in the body. Malignant tumor cells show up brighter in the picture because they are more active and take up more glucose than normal cells do. This imaging test checks for signs of cancer in the lung, liver, and spleen.

- **CD34 lymphocyte count**: A procedure in which a blood sample is checked to measure the amount of CD34 cells (a type of white blood cell). A lower than normal amount of CD34 cells can be a sign the immune system is not working well.

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

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

- The type of Kaposi sarcoma.
- The general health of the patient, especially the patient's immune system.
- Whether the cancer has just been diagnosed or has recurred (come back).

Classic Kaposi Sarcoma

Key Points for This Section

Classic Kaposi sarcoma is found most often in older men of Italian or Eastern European Jewish origin.

Classic Kaposi sarcoma is a rare disease that gets worse slowly over many years.

Signs of classic Kaposi sarcoma may include slow-growing lesions on the legs and feet.

Patients may have one or more red, purple, or brown skin lesions on the legs and feet, most often on the ankles or soles of the feet. Over time, lesions may form in other parts of the body, such as the stomach, intestines, or lymph nodes. The lesions usually don't cause any symptoms, but may grow in size and number over a period of 10 years or more. Pressure from the lesions may block the flow of lymph and blood in the legs and cause painful swelling. Lesions in the digestive tract may cause gastrointestinal bleeding.

Another cancer may develop.

Some patients with classic Kaposi sarcoma may develop another type of cancer before the Kaposi sarcoma lesions appear or later in life. Most often, this second cancer is non-Hodgkin lymphoma. Frequent follow-up is needed to watch for these second cancers.

African Kaposi Sarcoma

African Kaposi sarcoma is a fairly common form of the disease found in young adult males who live near the equator in Africa. Signs of African Kaposi sarcoma can be the same as classic Kaposi sarcoma. However, African Kaposi sarcoma can also be found in a much more aggressive form that may cause sores on the skin and spread from the skin to the tissues to the bone. Another form of Kaposi sarcoma that is common in young children in Africa does not affect the skin but spreads through the lymph nodes to vital organs, and quickly becomes fatal.

This type of Kaposi sarcoma is not common in the United States and treatment information is not included in this summary.

Immunosuppressive Therapy–related Kaposi Sarcoma

Immunosuppressive therapy–related Kaposi sarcoma is found in patients who have had an organ transplant (for example, a kidney, heart, or liver transplant). These patients take drugs to keep their immune systems from attacking the new organ. When the body's immune system is weakened by these drugs, diseases like Kaposi sarcoma can

develop.

Immunosuppressive therapy–related Kaposi sarcoma often affects only the skin, but may also occur in the mucous membranes or certain other organs of the body.

This type of Kaposi sarcoma is also called transplant-related or acquired Kaposi sarcoma.

Epidemic Kaposi Sarcoma

Key Points for This Section

Epidemic Kaposi sarcoma is found in patients who have acquired immunodeficiency syndrome (AIDS).

Epidemic Kaposi sarcoma occurs in patients who have acquired immunodeficiency syndrome (AIDS). AIDS is caused by the human immunodeficiency virus (HIV), which attacks and weakens the immune system. When the body's immune system is weakened by HIV, infections and cancers such as Kaposi sarcoma can develop.

Most cases of epidemic Kaposi sarcoma in the United States have been diagnosed in homosexual or bisexual men infected with HIV.

Signs of epidemic Kaposi sarcoma can include lesions that form in many parts of the body.

The signs of epidemic Kaposi sarcoma can include lesions in different parts of the body, including any of the following

Kaposi sarcoma is sometimes found in the lining of the mouth during a regular dental check-up.

In most patients with epidemic Kaposi sarcoma, the disease will spread to other parts of the body over time. Fever, weight loss, or diarrhea can occur. In the later stages of epidemic Kaposi sarcoma, life-threatening infections are common.

The use of drug therapy called HAART reduces the risk of epidemic Kaposi sarcoma in patients infected with HIV.

HAART (highly active antiretroviral therapy) is a combination of several drugs that block HIV and slow down the development of AIDS and AIDS-related Kaposi sarcoma. For information about AIDS and its treatment, see the AIDSinfo Web site.

Nonepidemic Gay-related Kaposi Sarcoma

There is a type of nonepidemic Kaposi sarcoma that develops in homosexual men who have no signs or symptoms o HIV infection. This type of Kaposi sarcoma progresses slowly, with new lesions appearing every few years. The lesions are most common on the arms, legs, and genitals, but can develop anywhere on the skin.

This type of Kaposi sarcoma is rare and treatment information is not included in this summary.

Treatment Option Overview

Key Points for This Section

There are different types of treatment for patients with Kaposi sarcoma.

Different types of treatments are available for patients with Kaposi sarcoma. 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.

Treatment of epidemic Kaposi sarcoma combines treatment for Kaposi sarcoma with treatment for AIDS.

For the treatment of epidemic Kaposi sarcoma, highly active antiretroviral therapy (HAART) is used to slow the progression of AIDS. HAART may be combined with anticancer drugs and medicines that prevent and treat infections.

Four types of standard treatment are used to treat Kaposi sarcoma:

Radiation therapy

Radiation therapy is a cancer treatment that uses high-energy x-rays or other types of radiation to kill cancer cells or keep them from growing. 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 of cancer being treated.

Certain types of external radiation therapy are used to treat Kaposi sarcoma lesions. Photon radiation therapy treats lesions with high-energy light. Electron beam radiation therapy uses tiny negatively charged particles called electrons

Surgery

The following surgical procedures may be used for Kaposi sarcoma to treat small, surface lesions:

- Local excision: The cancer is cut from the skin along with a small amount of normal tissue around it.
- Electrodesiccation and curettage: The tumor is cut from the skin with a curette (a sharp, spoon-shaped tool). A needle-shaped electrode is then used to treat the area with an electric current that stops the bleeding and destroys cancer cells that remain around the edge of the wound. The process may be repeated one to three times during the surgery to remove all of the cancer.
- Cryosurgery: A treatment that uses an instrument to freeze and destroy abnormal tissue. This type of treatment is also called cryotherapy.

Chemotherapy

Chemotherapy is a cancer treatment that uses drugs to stop the growth of cancer cells, either by killing the cells or by stopping them 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). To treat local Kaposi sarcoma lesions, such as in the mouth, anticancer drugs may be injected directly into the lesion (intralesional chemotherapy). Sometimes the chemotherapy is given as a topical agent (applied to the skin as a gel.) The way the chemotherapy is given depends on the type of cancer being treated.

Liposomal chemotherapy uses liposomes (very tiny fat particles) to carry anticancer drugs. Liposomal doxorubicin is used to treat Kaposi sarcoma. The liposomes build up in Kaposi sarcoma tissue more than in healthy tissue, and the doxorubicin is released slowly. This increases the effect of the doxorubicin and causes less damage to healthy tissue.

See Drugs Approved for Kaposi Sarcoma for more information.

Biologic therapy

Biologic therapy is a treatment that uses the patient's immune system to fight cancer. Substances made by the body or made in a laboratory are used to boost, direct, or restore the body's natural defenses against cancer. This type of cancer treatment is also called biotherapy or immunotherapy. Interferon alfa is a biologic agent used to treat Kaposi sarcoma.

See Drugs Approved for Kaposi Sarcoma for more information.

New types of treatment are being tested in clinical trials.

Information about clinical trials is available from the NCI Web site.

Targeted therapy

Targeted therapy is a type of treatment that uses drugs or other substances to identify and attack specific cancer cells without harming normal cells. Monoclonal antibody therapy is one type of targeted therapy being studied in the treatment of Kaposi sarcoma.

Monoclonal antibody therapy is a cancer treatment that uses antibodies made in the laboratory from a single type of immune system cell. These antibodies can identify substances on cancer cells or normal substances that may help cancer cells grow. The antibodies attach to the substances and kill the cancer cells, block their growth, or keep them from spreading. Monoclonal antibodies are given by infusion. These may be used alone or to carry drugs, toxins, or radioactive material directly to cancer cells.

Bevacizumab is a monoclonal antibody that is being studied in the treatment of Kaposi sarcoma.

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 Kaposi Sarcoma

Classic Kaposi Sarcoma

Treatment for single lesions may include the following:

- Radiation therapy.
- Surgery.

Treatment for lesions all over the body may include the following:

- Radiation therapy.
- Chemotherapy.

Treatment for Kaposi sarcoma that affects lymph nodes or the gastrointestinal tract usually includes chemotherapy with or without radiation therapy.

Check for U.S. clinical trials from NCI's list of cancer clinical trials that are now accepting patients with classic Kaposi sarcoma. 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.

Immunosuppressive Therapy–related Kaposi Sarcoma

Treatment for immunosuppressive therapy–related Kaposi sarcoma may include the following:

Check for U.S. clinical trials from NCI's list of cancer clinical trials that are now accepting patients with immunosuppressive treatment related Kaposi sarcoma. 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.

Epidemic Kaposi Sarcoma

Treatment for epidemic Kaposi sarcoma may include the following:

Check for U.S. clinical trials from NCI's list of cancer clinical trials that are now accepting patients with AIDS-related Kaposi sarcoma. 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.

Recurrent Kaposi Sarcoma

Treatment for recurrent Kaposi sarcoma depends on which type of Kaposi sarcoma the patient has. Treatment may include a clinical trial of a new therapy.

Check for U.S. clinical trials from NCI's list of cancer clinical trials that are now accepting patients with recurrent Kaposi sarcoma. 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 Kaposi Sarcoma

For more information from the National Cancer Institute about Kaposi sarcoma, see the following:

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

Changes to This Summary (10/15/2014)

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 Kaposi sarcoma. 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

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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).

- **Updated:** October 15, 2014