MEDICAL TRAVEL SHOP "DMC"

CANCER CENTER

liv HOSPITAL TURKEY

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liv HOSPITAL Cancer Center

TUMOR COUNCIL

At the Liv Hospital Cancer Center, doctors from different disciplines come together forming the Tumor Council, where cases are examined with a multidisciplinary approach. The specialists on this council apply personalized treatment to patients in line with the particular details of each individual case.

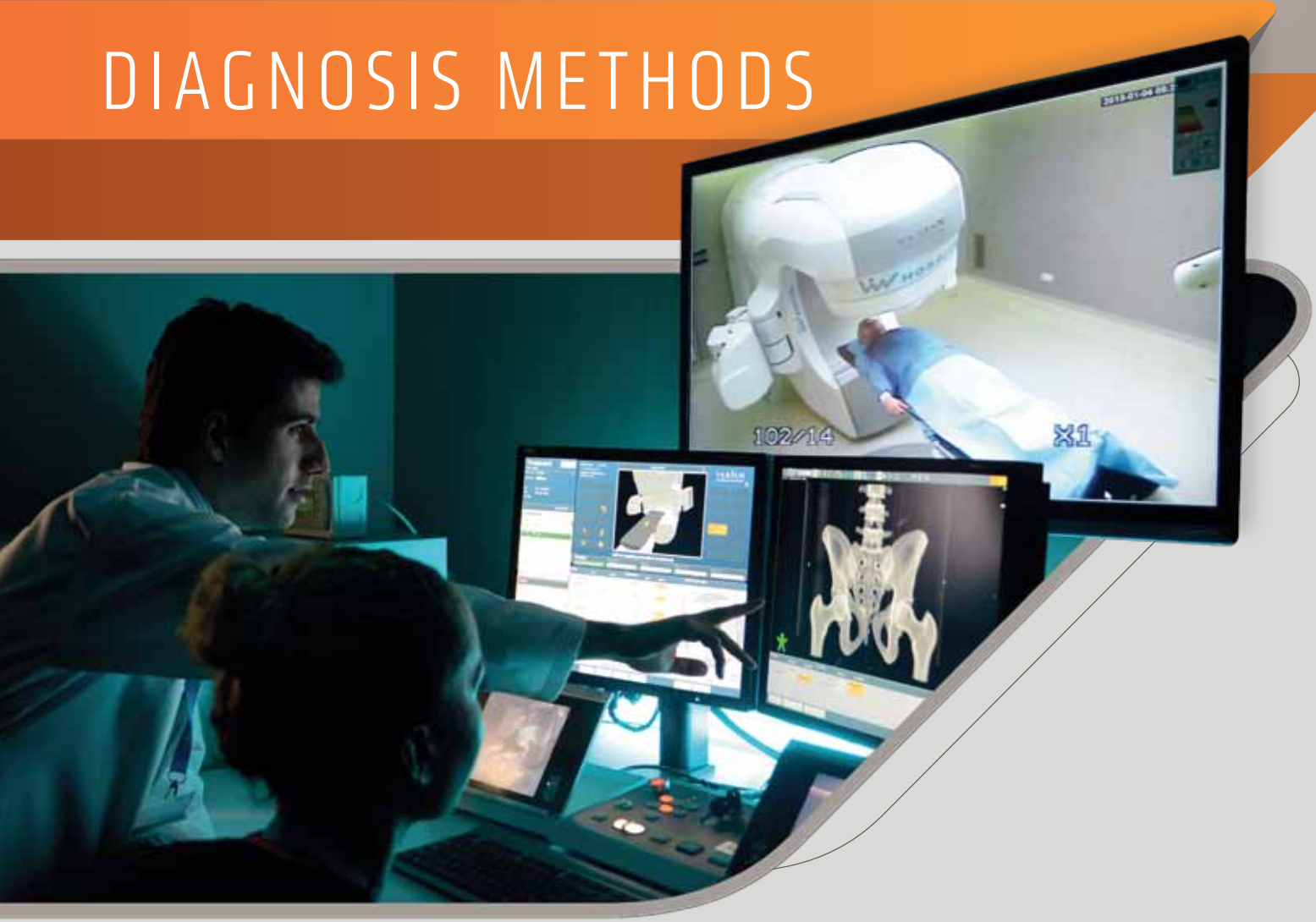
Cancer success rates today vary according to the type of cancer and the treatment approach that is applied. Individualized all-round diagnosis and treatment is the most important step forward in this area. This is why specialists from different disciplines coming together to decide the most appropriate treatment plan is of vital importance for cancer patients in the process of presenting treatment options.

What Branches are represented on the Tumor Council?

- Medical Oncology
- Radiation Oncology
- Nuclear Medicine
- Radiology
- Pathology
- Gastroenterology
- General Surgery
- Gynecologic Oncology
- Urology
- Brain Surgery
- Head & Neck Tumors
- Chest Surgery
- Chest Diseases
- Genetic
- Algology
- Dietician
- Psychiatry

** Attendance of different disciplines may vary according to cases.*

DIAGNOSIS METHODS



PET/CT

PET/CT, the latest cancer screening technology, is a screening device combining PET (Positron Emission Tomography) and CT (Computed Tomography). While able to provide information on whether mass from the cancer cell metabolisms are benign or malign, PET can also provide vital information of the cancers spreading in the body.

Breast PET

Breast PET (Positron Emission Mammography/PEM) is a screening technology developed in recent years. Using this method, lesions in the breast can be screened with high levels of accuracy before the lesions reach sufficient size to be anatomically screened.

Retentions from abnormal tissue in the breast are revealed in precise detail, with 1.6mm accuracy through High Resolution Breast PET screening.

MR

Magnetic Resonance, also known as MR, is an imaging technique through radiofrequency waves in a strong magnetic field environment. MR, a radiation-free technique, achieves successful results particularly in the imaging of soft tissue. The method yields a greater wealth of data than other breast imaging techniques; many cancers not detected by other methods focus can be detected.

The 3 Tesla MR imaging device with a high-tech capacity to image the whole body, results in the highest quality and most rapid imaging of the brain, facilitating surgery that can achieve complete removal of the tumor.

Thanks to surgery while the surgeon to obtain image feature, the surgeon can obtain high detailed imaging in a sterile environment without closing the surgical site to ensure optimal surgical results.

Tomography

Computed Tomography achieves sectional image of the examined area using X-rays. The image is used in the assessment of internal organs, soft tissue and bone. It provides the ability to diagnose disease through further examination. Tests such as MRI and ultrasound are radiation-free methods. The patient is not exposed to radiation. It also offers advanced imaging possibilities.

Mammography

Mammography is the radiological diagnosis of emerging breast cancer showing early symptoms. With this method all women above a certain age in society are advised to undergo mammography scans aiming to catch breast cancer at an early stage. With state of the art mammography equipment, a lower dose of higher quality yield can be obtained.

Genetic Screening

Genetic studies for early detection of some types of cancer contribute significantly to the prevention of cancer. Genetic screening services applied by family members at risk are identified and targeted for early intervention.

ENDOSCOPIC PROCEDURES

Colonoscopy

Large intestinal cancers are preventable forms of cancer. The detection and removal of the precursor signs of rectal cancer and colon polyps prove that it is an effective diagnosis and treatment method in preventing cancer development.

It allows the collection of biopsy specimens and some interventional therapy methods, which constitutes a further major advantage.

With a light and camera attached to the tip, and a flexible 1cm diameter, the colonoscope examines the large intestine and the last part of the small intestine through the anus.

During the examination, and as required, a biopsy may be taken from the areas that seem abnormal for pathological examination. Polyps that have the potential to develop into cancer can then be removed.

Gastroscopy

Gastroscopy is an analysis method that gives the opportunity to see the inside of the esophagus, stomach and duodenum.

After anesthesis of the oral cavity, a device with a camera on the tip called a gastroscope is carefully inserted into the stomach.

Thus the stomach is scanned for any disease; biopsies are taken when necessary to diagnose gastric diseases and gastric cancer.

ERCP *(Endoscopic Retrograde Cholangiopancreatography)*

ERCP is used in the diagnosis and treatment of possible stones, tumors that may cause biliary tract inflammation (cholangitis) and pancreas inflammation (pancreatitis) caused by denseness or a blockage in the biliary tract and pancreatic duct. The intervention is carried out by a video-endoscope (duodenofiberscope). Some pathologies that have been located through imaging of the biliary tract or pancreatic duct can be treated in the same session; normal biliary flow is achieved by placing a stent on dense areas and cleaning any stones or sludge in the common bile duct.

Endoscopic Ultrasonography

Early diagnosis of gastric cancer is possible with endoscopic ultrasonography. Endoscopic and ultrasonographic images can be taken from the stomach while biopsies can be extracted from the deep structure behind the lesion using an ultrasonographic probe tied to the front of the endoscopy device. This facilitates early diagnosis of gastric cancer and allows endoscopic access to the pancreas (pancreatic cysts, abscesses, etc.) and other organs surrounding the stomach.

BRONCHOSCOPIC PROCEDURES

Bronchoscopy

Bronchoscopy is the direct examination of the respiratory tracts with a device that has an endoscopic camera at the tip. The small device accesses from the nose or mouth via the throat into the bronchial passages, using the channel at the center of the bronchoscope to clean, brush or gain biopsy samples of tumor tissue from the bronchial passages.

Endobronchial Ultrasound

Endobronchial ultrasound is the combined use of a bronchoscope with ultrasound procedures. This method enables high accuracy needle aspiration biopsies from the lymph nodes or tumors in the vicinity of the airways.

Interventional Bronchoscopy

Interventional bronchoscopy is used in the treatment of patients with tumor related restriction of the airways.

Laser, argon plasma coagulation, electrocautery, cryocautery or balloon dilation procedures are carried out using this method. In addition, stents can be inserted into the blocked airways, either directly or after this procedure as an integral part of the treatment. Physicians make a decision about which procedures to use based on the kind of cancer involved.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CANCER SURGERY

Patients at Liv Hospital Cancer Center are examined and assessed with multi-faceted specialist methods and technology. The appropriate surgical and post-surgical approach is chosen by means of multi-disciplinary specialist evaluations facilitating the adoption of the most advanced personalized cancer treatment procedures.

General Surgery

Esophageal Cancer

Most diagnoses of esophageal cancer, which manifests itself with the patient experiencing difficulty in swallowing, are made with an endoscope. The most effective method of treatment for esophageal cancer is surgical. A procedure called an esophagectomy aims to prevent recurrence or spread of the tumor by removing it entirely. The esophagectomy (the complete removal of the esophagus) is carried out using open surgery or minimally invasive techniques (laparoscopic / robotic). A new esophagus is formed by turning the stomach into a tube or by using the patient's own large intestine. With surgery remaining the most appropriate method of treatment in cases of esophageal cancer, personalized treatment methods play a significant role in both the pre- and post-op periods.

Stomach Cancer

The stomach is the digestive organ that grinds food located between the esophagus and the small intestine that grinds up food. Stomach cancer originates in the internal surfaces of the stomach and can be spread through the lymphatic channels. With symptoms such as swallowing difficulties, anemia, weight loss and stomach pain, the disease is diagnosed by taking a biopsy using visual endoscopic examination of the mass in the stomach. The surgery involves the widespread removal of the lymph nodes while carefully protecting the vascular structures. High quality surgery serves to significantly increase disease-free survival periods. Advanced robotic methods are employed to perform expanded lymphadenectomy procedures. For this reason, stomach cancer surgery requires highly experienced and accomplished surgeons.

Colorectal Cancers

When treated by experienced and competent specialists using minimally invasive procedures (laparoscopic and robotic surgery), cancers of the large intestine and the rectum known as cancers of the digestive system can be addressed while ensuring maximum patient comfort, quality of life and rapid recovery. Post-op radiotherapy techniques and chemotherapy procedures facilitate the highest possible levels of health and comfort in the patient's ongoing daily life. Colorectal cancer treatment varies according to whether the cancer is located in the colon or the rectum, and whether congenital or genetic factors are evident. Laparoscopic and robotic surgery minimizes complication rates in colorectal cancer cases. In addition, the need for a permanent colostomy bag is significantly reduced.

Pancreatic Cancer

Known as an aggressive form of cancer, early diagnosis of pancreatic cancer cases is of vital importance. While surgery remains the most effective form of treatment for pancreatic cancers, the Liv Hospital Cancer Center employs pre- and post-op personalized treatment procedures and advanced technologies to serve patients with multifaceted approaches encompassing surgical, chemotherapy and radiotherapy applications to maximize success rates. Surgical treatment can be performed laparoscopically and robotically to give patients various advantages including reduced pain and shorter hospitalization and recovery periods, as well as more satisfactory cosmetic outcomes.

Breast Cancer

The most significant aspect of breast cancer treatment remains the surgical approach. The objective of the surgery is the entire physical removal of the tumor from the body. Liv Hospital operates screening programs for early diagnosis as well as providing advanced cancer surgery and reconstructive surgical techniques. Surgical objectives include the best possible cosmetic results as well as safeguarding organs. Advanced technological devices are employed to evaluate the axillary (armpit) lymph nodes and to avoid unnecessary surgery; surgical decisions can be made at the moment of surgery. Radiotherapy and chemotherapy applications are carried out at the Breast Clinic in the post-operative period with a view to the highest possible cosmetic outcomes.

Cancer of the Liver and Biliary Tract

Early diagnosis is crucial in cases of cancer of the liver, gallbladder and bile duct. Alcohol and hepatitis are the leading causes of liver cancer. Just as Liv Hospital's multidisciplinary approach impacts positively on success rates for liver cancer surgery, interventional radiology (angio-embolization, radio-embolization, radiofrequency) procedures, advanced technologic procedures such as tumor-modulated radiotherapy and chemotherapy are also carried out at Liv Hospital.

Surgery can also be performed using laparoscopic and robotic techniques that minimize pain and recovery periods, granting patients various advantages including shorter periods of hospitalization and better cosmetic outcomes. The incidence of cancers of the gallbladder and biliary tract increase with age and are more common in patients with familial infection and those with stones or cysts in the bile duct. While surgery remains the most effective form of treatment of these types of cancer, Liv Hospital Cancer Center's multidisciplinary and personalized methods of treatment maximize success. Advanced technology devices are used to treat jaundice and jaundice related conditions at our Radiology and Gastroenterology Clinics with the capacity to perform a wide spectrum of interventions. Multidisciplinary approaches ensure effective treatments including chemotherapy and radiotherapy, increasing success rates.

Endocrine Cancers

Thyroid Cancer

While the prognosis in 90 – 95% of thyroid cancers is not so negative, some rare cases do have a poor prognosis. Complete recovery is possible in frequently occurring papillary thyroid and follicular thyroid cancer cases when treated appropriately and when supplementary radioactive iodine treatment is applied in line with requirements. In surgery, access is achieved from the groin region for the complete removal of the thyroid tissue and (if disease is preset in them), the lymph glands as well. Post-operative thyroid cancer monitoring is crucial following correct and effective surgical intervention to prevent the need for secondary surgery.

Adrenal Gland Cancer

The removal of the kidney, surrounding fatty layers and the adrenal glands are all possible considerations depending on the size of the cancer and the extent to which it has spread. The most common adrenal tumors are benign types known as adenoma or nodules. Surgery, hormone treatment, chemotherapy, radionuclide treatment and minimally invasive treatment methods carried out separately or in combination are possible methods to treat adrenal tumors.

The most effective treatment methods are decided upon by Liv Hospital's team of experienced physicians and experts in close consultation with the patient. Surgery is the standard treatment for both benign and fast-growing malignant tumors. The particular surgical approach is determined in relation to the location and size of the tumor, and whether or not it has spread to the neighbouring lymph nodes or distant organs.

GYNECOLOGIC CANCERS

Uterine Cancer

85% of patients with uterine cancer do not encounter disease related issues. Surgery alone is generally sufficient. In a limited group of patients, radiotherapy or chemotherapy may be required.

The surgery involves the removal of the womb, the ovaries, surrounding lymph nodes and abdominal adipose tissue. Uterine cancer surgery is carried out using a wide array of endoscopic (laparoscopic or robotic) methods. If diagnosed very early, and in cases of women who want to have children, the disease can be successfully treated using medication methods, albeit rarely.

Cervical Cancer

Surgical removal of the cervix remains the only way to treat cervical cancer occurring at the microscopic level. In cases where the patient wishes to have children, when the tumor is less than 4 cm and has not spread, open or endoscopic (laparoscopic or robotic) surgery may be carried out via the vagina or the stomach, to protect the body of the uterus. Surgery with high rates of success is also possible in cases where the uterine cancer has spread sideways. These are radical surgeries that are also carried out either with open or endoscopic methods. Early stage urinary issues can also be prevented by protecting the nerves within the stomach.

Ovarian Cancer

The gold standard in ovarian cancer treatment is the single operation performed by highly trained and experienced gynecologic oncologists without leaving any visible signs of the tumor behind. The success rate for this kind of surgery does not exceed 50% in many centers in Europe. At Liv Hospital, the success rate for complete removal by the Gynecologic Oncology team is 93%.

This surgery may also involve the removal of cancerous tissue that may spread to other organs including the uterus, both ovaries, the fallopian tubes, the surrounding lymph nodes, and abdominal adipose tissue.

In the event that the tumor is at an early stage, it is small and is restricted to the ovary, the womb, ovaries, abdominal fatty tissue and lymph nodes may be removed using laparoscopic or robotic surgery.

If the cancer has been detected very early, or in some cases of ovarian cancer in young patients, the patient's ability to have children and their hormone production is preserved by leaving the other ovary and the womb intact.

UROONCOLOGIC CANCERS

Prostate Cancer

One of the most frequently occurring cancers in men, prostate cancer develops with age. In spite of the fact that research conducted in recent years shows the importance of molecular, genetic, environmental and dietary factors in the development of prostate cancer, the exact causes that trigger the cancer are still unknown. The aim of prostate cancer screening is to diagnose the condition while it is still restricted to the prostate itself, in which case the 10 year survival rate is close to 100%.

There is more than one effective way to treat prostate cancer. In the event that the disease is caught early, (80-90% of cases) the condition may be cured using open, laparoscopic and robotic prostatectomy techniques.

Testicular Cancer

Testicular cancer constitutes about 1% of all cancers in men and is the most frequently occurring cancer in men between the ages of 15 and 35. The disease is not related to personal habits, life styles or activities. We do know that the risk is elevated in undescended testicle cases, and in patients who have suffered cancer in the other testicle. The most significant symptoms are pain, testicular swelling or hardening. Liv Hospital has a versatile, multidisciplinary and multifaceted approach to testicular cancer. Diagnosis and treatment planning is undertaken in cooperation between the urology, medical oncology, radiation oncology, pathology and radiology clinics. Surgery is carried out by our experienced urologists; post-operative recovery rates are high in testicular cancer cases while the most advanced equipment is used to deliver radiotherapy and chemotherapy in required cases.

Kidney Cancer

Originating from their own cells, kidney cancers comprise 2-3% of all cancers occurring in the body. The seriousness of the disease as a urologic form of cancer maintains its position as a highly significant condition.

For every 3 men who suffer kidney cancer, the condition affects 2 women. It occurs more frequently in patients in their 60's and 70's but it can occur in younger people too. The most significant risk factor is smoking. 20 – 30% of those suffering the disease are smokers. Two other significant factors are being overweight and high blood pressure.

Since the kidneys are located in the back of the inside of the abdominal region, tumors can grow without symptom. Symptoms that arise after growth of the tumor can include urinary bleeding and pain, or the spread of the cancer to other organs. Other indications may include weight loss, fever, nausea and weakness.

Surgical interventions carried out in early diagnosed kidney cancer cases are important with respect to the complete recovery of the patient. In some cases, simple detection of blood in the urine can lead to diagnosis using ultrasound, CT or MR imaging tests.

At Liv Hospital, the most appropriate and effective treatment method for kidney cancer is determined through the collaborative consultation of specialists from the urology, medical oncology, and radiation oncology clinics sitting as a joint tumor council. Patients who are diagnosed early may be successfully treated through the removal of the tumor from the kidney using robot assisted or direct laparoscopy.

Cancer of the Bladder

Bladder cancer is the most frequently occurring urinary system cancer in both men and women. Smoking remains one of the leading risk factors. Smokers constitute 50% of bladder cancer sufferers. This is because various poisonous substances in tobacco are expelled from the kidneys after being absorbed into the blood. In addition, the disease is known as a professional hazard in metal and petrol industry workers. And serious carcinogenic material has been found in certain permanent hair dyes.

If the bladder cancer is restricted to the mucosa, recovery may be achieved through TUR surgery accessing from the urinary tract, and medication treatment. In other cases where the cancer is located at a deeper level, or where it has spread to the bladder muscle, the complete removal of the bladder may be required, together with radiotherapy and chemotherapy.

Liv Hospital takes a versatile, multidisciplinary approach to cases of bladder cancer. Diagnosis, and then the most appropriate and effective treatment method for kidney cancer, is determined through the collaborative consultation of specialists from the urology, radiology, radiation oncology, medical oncology and pathology clinics.

PEDIATRIC ONCOLOGY

With our emphasis on multifaceted, multidisciplinary approaches to childhood cancer, Liv Hospital pursues a 360 degree treatment philosophy, coupled with a strong spirit of teamwork. Liv Hospital has a Pediatric Oncology Council exclusively for childhood cancer cases.

Decisions taken as a result of consultation and discussion at these Councils are implemented without delay and effective treatment protocols are established. In consultation between the Pediatric Oncology Council and the child's family, who remain central to the entire treatment process, chemotherapy, surgery or radiotherapy is carried out at the correct time and in line with established algorithms in order to maximize the patient's ability to conform to the treatment. Pediatric oncology is all about working as a team with the patient's family. The oncologist plans, arranges and implements the medication part of the treatment. Necessary steps are then taken to prevent recurrence of the disease following the patient's recovery.

The Need for Precise Planning

Radiotherapy carried out on children needs to be planned with extreme care and precision because cartilage growth is ongoing in children in the developmental stage. The protection of surrounding tissue is as important as correct targeting and dosage.

Taking Decisions: The Pediatric Oncology Council

The pediatric oncology council plays a key role during the catheter placing stages in the surgical, biopsy and treatment process. Decisions about what approach to take to the cancer in each individual case, and about surgical removal, are taken under consideration of the impact of the tumor mass on surrounding organs; the pre- and post- chemo / radiotherapy surgical plan is carefully planned. Cases that have been discussed and approved by the Council as appropriate receive Intraoperative Radiotherapy (IORT) delivered by a radiation oncologist during the course of the surgery. IORT allows the administration of a high dosage of radiation to the recurrence risk area that would be impossible with standard radiotherapy techniques. IORT serves to increase the probability of the local control of the mass, as well as rendering significant benefits in terms of protecting surrounding tissue.

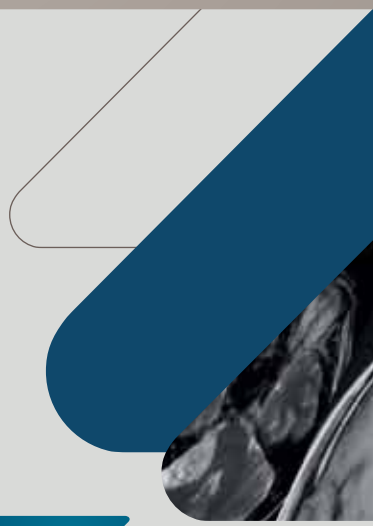
Aiming for Maximum Benefit

Diagnostic and interventional radiology is a form of teamwork that is in high demand in terms of assessing the spread of the disease, the effectiveness of treatment and post-treatment monitoring. It is important to analyze radiologic mortality in order to achieve maximum benefit and minimum side effects in line with the ALARA (“as low as is reasonably achievable”) principle.

BRAIN TUMORS

Brain tumor symptoms and indications can include high intracranial pressure-related headaches, nausea and vomiting, together with retinal edema, progressive motor loss, seizures, changes in levels of consciousness and hormonal disorders.

The determining factors when it comes to priority treatment of tumors that put pressure on the brain and cerebellum include the type and location of the tumor, the age and general condition of the patient, and whether there are any additional systemic issues that might impact on the decision to operate.
In the event that a significant part of the tumor can be surgically removed, there may be no need for supporting treatments such as radiotherapy and / or chemotherapy. Nonetheless, even if it appears that the entire tumor has been removed by surgery, it may be necessary to administer radiotherapy and chemotherapy in the subsequent period in cases where there is a high risk of recurrence.
The fundamental objective of tumor treatment is to eradicate the tumor without compromising the patient's quality of life or at least while extending the patient's health and quality of life as much as possible.



Most Common Tumors

- Metastatic brain tumors
- Glial tumors
- Meningiomas
- Pituitary adenomas
- Spinal cord tumors

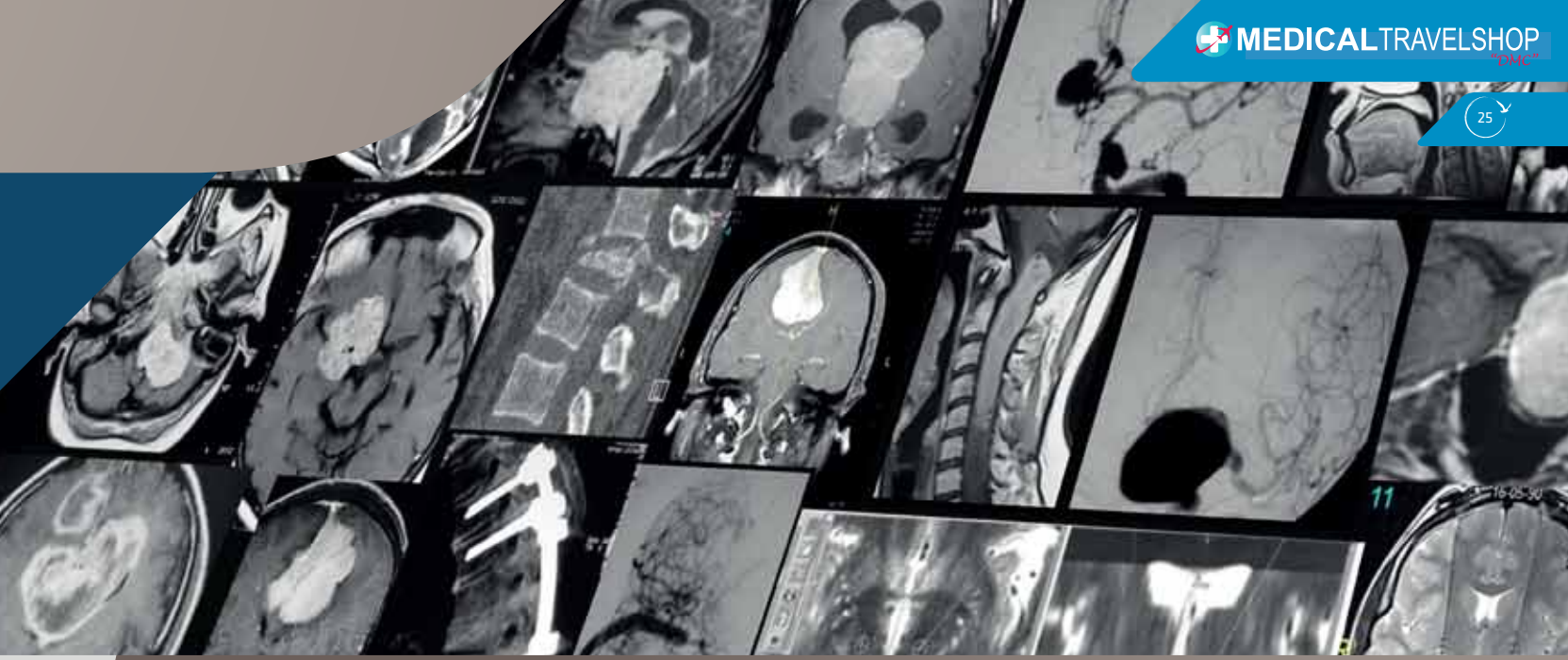
HEAD AND NECK TUMORS

Head and neck tumors are among the forms of cancer that are treatable when diagnosed early.

Most such cases display early stage symptoms. They can be treated at the early stage without loss of quality of life.

Included within the scope of head and neck cancers are nasopharyngeal cancers in the oral cavity, inside the cheeks, the gums, palate, tongue, floor of the mouth, nostrils, skin and nose tissue, and the uppermost part of the throat. The term also covers paranasal sinus cancers, oropharynx cancers in the space joining the back of the nose to the throat, hypopharyngeal cancers a little further down the throat, cancers of the larynx beneath that, cancers of the auricle and the external ear canal, and salivary gland cancer.

Developing rapidly in line with current advances in technology, the medical branches of ENT medicine, head and neck surgery and radiation oncology now facilitate rational treatments for head and neck cancers.



LUNG CANCER

Lung cancer develops with the uncontrolled proliferation of the cells that line the lungs, especially the airways. IT can be detected using chest X-rays and Computerized Tomography (CT) examination techniques. A biopsy is required for definitive diagnosis. This is normally carried out via a bronchoscopy or CT-assisted needle biopsy. Treatment is planned in stages. Staging is determined in line with evaluation of the size and spread of the tumor, involvement of regional lymph nodes and the presence of distant metastasis (if any). While radiotherapy and chemotherapy is preferred in cases of small cell lung cancer, the first option for non small cell cancer is surgery. In the case of tumors caused by blockage in the trachea and bronchi, interventional bronchoscopy is a possible form of treatment.

SKIN CANCERS

Skin cancer is among the most frequently occurring forms of cancer in society today. There are a number of different kinds of skin cancer, each with a different appearance. In the event that skin cancer is diagnosed, advanced treatment may be required. Thanks to early diagnosis, surgery may be sufficient treatment. In more advanced cases, (in which the cancer has spread to other organs), a different treatment protocol may be applied. The form of treatment varies according to the type of skin cancer, its extent and stage of development, and the requirements and condition of the patient.

MINIMAL INVASIVE SURGERY

(Laparoscopic-VATS (Video Assisted Thoracoscopic Surgery)-Robotic Surgery)

Laparoscopic-VATS – Robotic (Minimally Invasive) or closed surgery, popularly known as keyhole surgery, is a specialized field of surgery.

Together with advances in technology, these techniques have become widely used throughout the world for gall bladder, pancreas, lung, liver, stomach and intestinal surgery. The methods involves lower levels of pain, blood loss and infection rates than traditional open surgery techniques.

Robotic surgery facilitates rapid healing. Whereas in open surgery an incision is generally required stretching into the stomach to the abdomen, the laparoscopic-robotic (keyhole)technique can be completed with a single 0.5-1 cm incision.

What are the Advantages of Robotic Surgery?

In addition to the classic advantages of laparoscopic surgery, the most important advantages of robotic surgery are as follows:

- Less pain: Means Minimal trauma at the skin and muscle, much less post-surgical pain and discomfort.
- Less risk of infection: the organs in the abdominal cavity has minimum contact with the air in the operating room, compared to open surgery, which means significantly lower risk of infection.
- Safer operation: Three size and scale images, by providing better vision ensures the protection of the blood vessels and nerves.
- Smaller wounds: Against 20-25 cm wounds in open surgeries, with 1-1,5 cm incisions wound sizes will be minimal.
- Rapid recovery : Cause of the beginning of movement and feding earlier, recovery of the paitent is already faster.
- Shortening the length of hospital stay: 3 or 4 days after the operation, the majority of patients are being discharged.
- Faster return to work and daily life: Patients are achieved more quickly to normal life due to the rapid convalescence and recovery.

Thanks to its 3D imaging capacities, the robotic surgery system allows minimally invasive surgery to be effectively used even in complex cases. Video-assisted thoracoscopic surgical techniques also allow the treatment of lung and esophageal cancers. In addition, by enabling the visualization of the chest cavity, these techniques allow the extraction of biopsy samples from the pleural membrane, lung nodules, mediastinal masses and pleural fluid.

TREATMENT METHODS

RADIATION ONCOLOGY

Radiation oncology uses ionizing rays (radiation) in treating cancer. The main principle of radiation therapy is to prevent the division of the cells, and then to eliminate them.
Radiotherapy's chief objective is to ensure that the normal healthy tissue around the tumor receives the lowest possible dose and is protected, while the planned high-level lethal dose is focused on the tumor. 70 percent of all cancer patients require radiotherapy treatment at some stage.

IORT (Intraoperative Radiotherapy)

IORT (Intraoperative Radiotherapy) is radiotherapy implemented during cancer surgery. The objective is to direct radiation at the tumor bed while protecting healthy tissue in cases where complete surgical removal is judged not to have occurred.

After surgical removal of the tumor bed, high-risk areas are prepared for radiation treatment. The radiation treatment is implemented as a single dose at a dose pre-determined by the radiation oncologist to the area that the surgeon has opened up by moving the abdominal organs away from the area while the patient is under anesthesia. Surgery ends by closing the wound after the beam process ends.

This method microscopically eliminates the cancer and protects healthy tissues and organs. Standard radiation therapy requires approximately six weeks of treatment, 5 days a week whereas IORT only requires a single dose. IORT can achieve successful outcomes in cases of stomach, pancreas, intestine, colon, breast, soft tissue, lung, pediatric and gynecologic cancer.

IORT affects the interior of the tumor bed. Clinically, it is specifically directed into the tumor bed to treat cases of relapsed colorectal cancer.

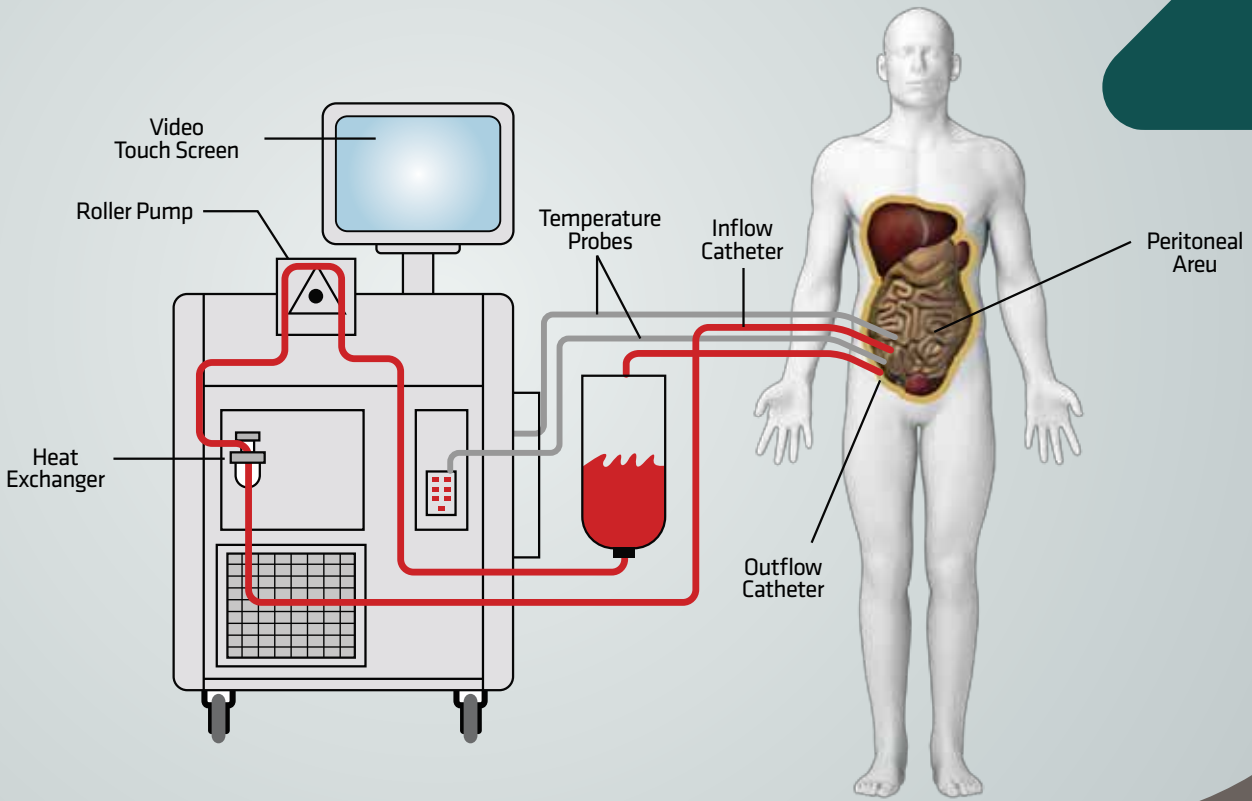
TRUEBEAM STX

TrueBeam STX is used in the treatment of all cancer types requiring radiotherapy.

One of the most important elements determining success in radiotherapy is technology. Truebeam STX is used at Liv Hospital as one of the main forms of radiotherapy treatments. Truebeam STX offers maximum protection for the surrounding healthy tissues while rapid dose implementation is directed at the tumor at the required density and with very high accuracy.

TrueBeam STX can be used in the treatment of all cancer types thanks to its synchronized movement tracking feature.

HIPEC



HIPEC, (Hyperthermic Intraperitoneal Chemotherapy) is a heated chemotherapy treatment applied directly to the stomach during surgery.

Contrary to systemic chemotherapy that circulates/spreads throughout the whole body, HIPEC only penetrates into cancer cells in the abdomen. Chemotherapy can be performed at higher doses with this method. The heated nature of the application increases chemotherapy medication absorption rates in cancer cells, eliminating microscopic cancer cells remaining in the stomach after surgery.

Which kinds of tumors are HIPEC treatable?

- Appendiceal tumors
- Colorectal cancers that have spread into the stomach
- Ovarian cancer
- Peritoneum and mesentery cancers

How is the method applied?

Before patients are treated with HIPEC, physicians eliminate visible tumors in the stomach with cytoreductive surgery operation. These surgeries may be applied using various techniques to reduce the tumor burden. After elimination of all eradicable tumors, a heated sterile chemotherapy solution is applied to the stomach to deal with any remaining cancerous cells.

The solution is placed in a hot bath temperature at 41 to 42 degrees Celsius. It stays in the stomach for approximately one and a half hours, enabling the chemotherapeutic agent to penetrate to a depth of 2 mm. The solution is then drained from the stomach and the incision is closed.

HIPEC is a treatment option in cases where the cancer is highly dispersed into the stomach.

What are the advantages?

- Allows high dose chemotherapy.
- Enables concentrated chemotherapy with enhanced effectiveness.
- Minimizes the rest of the body's exposure to chemotherapy.
- Increases the absorption of chemotherapy and the susceptibility/sensitivity of the cancer cells.
- Reduces some side effects of chemotherapy.

MEDICAL ONCOLOGY

Medical oncology is the branch of medicine that manages all medical cancer treatments. Chemotherapy indicates the general application of medical treatment in cancer cases.

Medicines for cancer treatment can be applied intravenously, from the hips, orally in pill form or sometimes into the stomach or other region. Chemotherapy today is an important treatment option increasing the chances of success in almost all types of cancer particularly for breast, lung, colon, ovarian cancers in men or women, lymphoma and leukemia.

Chemotherapy is applied alone in some cases, with other treatments such as surgery and radiotherapy in others. Chemotherapy can completely destroy cancer and prevent spreading, aiming to eliminate the remaining cancer cells.

In some cases it aims to increase the chance of recovery by strengthening the effectiveness of radiotherapy. It can also serve to prolong life by preventing the spread of cancer.

Physicians who specialize in medical oncology determine the most appropriate patient-specific treatment as well as minimizing damage to healthy tissue and protecting the quality of life.

INTERVENTIONAL RADIOLOGICAL PROCEDURES

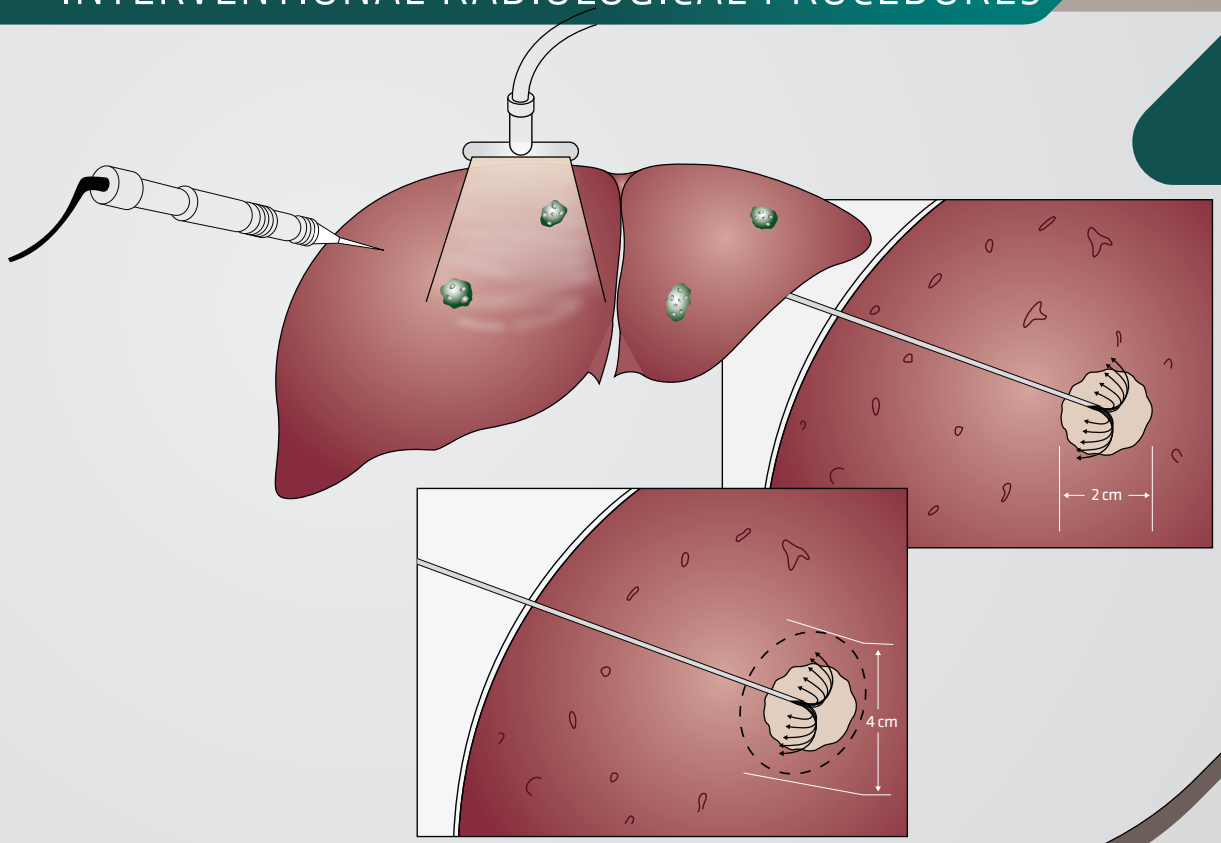
Opening of Bile and Urinary Tract Obstruction

Biliary and urinary tract blockages occurring during tumor treatment can be life-threatening and interrupt chemotherapy. In this case, initiatives to resolve congestion will increase the patient's adherence to treatment and their quality of life.

Biopsy

Definitive cancer diagnosis can be made as a result of the evaluation of suspected tissues at the pathological laboratory. Imaging methods such as tomography and ultrasound may also be used as reliable methods of sampling and evaluation.

INTERVENTIONAL RADIOLOGICAL PROCEDURES



Radiofrequency Ablation

Radiofrequency ablation (RFA) is a cancer treatment for the elimination of cancerous cells by heating with high-energy radio waves.

During radiofrequency ablation, a needle-thin probe is inserted into the skin via a very small incision with the help of guidance from ultrasound or CT scan. The heat-releasing probe serves to destroy the cancer cells.

TAKE / Chemoembolization

Chemoembolization minimizes healthy tissue's exposure to chemotherapy while it transmits chemotherapy medication directly into the tumor. This direct transmission method reduces side effects such as nausea and vomiting, maximizing the medication's ability to eliminate cancer.

Chemotherapy is injected directly into the tumor during chemoembolization by a catheter under video / image guidance. Chemotherapy medications are mixed with particles called microspheres that prevent the flow of blood to the tumor. Without the flow of blood, the tumor is deprived of the oxygen and nutrients it needs to grow.

Chemoembolization enables high doses of chemotherapy medicines to be directed at the cancerous tissue for longer periods of time, and during this time it prevents the effects of chemotherapy medications in other parts of the body. This method of chemotherapy is primarily used for liver cancer and cancers that have spread to the liver.

CELL TRACKING SYSTEM: ONCOGRAMME

Oncogramme is a laboratory method to understand which medication is going to be effective and which medication ineffective, by taking tissues from the patient and isolating them from cancer cells that are then treated with medication.

People are not only different from each other in their outwards appearance, but also at a cellular and tissue level, including at the level of cancerous cells and tissue. Chemotherapeutic agents which are effective for one cancer patient might not be equally effective for another patient with the same diagnosis. When complete results can be foreseen for one patient, sufficient impacts cannot be predicted for another patient; life-threatening side effects may even occur.

Situations where oncogramme can be used effectively:

- Treatment of the patients who have previously received treatment without successful results, and relapse cases.
- Determining drug sensitivity and resistance
- Treatment of tumors with unknown primary origin
- Treatment of rare tumors

NUCLEAR MEDICINE

Radioactive Lodine Treatment

Thyroid cancer is a cancer that originates in the thyroid gland cells. Thyroid cancer is surgically removed in an operation called a thyroidectomy. Radioactive iodine (I-131) treatment (atomic therapy) removes the remaining thyroid tissue.

In patients with differentiated thyroid cancer (papillary, follicular), postoperative destruction of residual thyroid tissue (ablation) or treatment of metastasis is performed successfully without risk and with iodine application.

Ytrium-90 Microcure Treatment

The initial form of treatment in cases of liver cancer is surgery. In cases when patients have undergone surgery, chemotherapy and radiotherapy are not implemented. In cases when treatments have not been effective, radionuclides are put into the cancerous tissue and treated with labelled microspheres.

Radioactive microsphere therapy is a treatment method based on delivery of radioactive substances into liver tumors by selective angiography. Microspheres are marked with a radioactive substance called Y-90. The radioactive material (radionuclide) is focused on an area of tissue about 0.5-1 centimeters in diameter. In this way, normal tissue is protected from the negative effects of exposure to radiation and radiation.

Samarium 153 Treatment

In patients with widespread bone metastases, Samarium-153 for systemic therapy with palliative or relief of pain relief can be performed.

Osteoblastic (sclerotic) and mixed type of painful and multiple bone metastases are resistant to analgesics and morphine; the most frequently occurring cases are prostate, breast and lung cancers(%80), while thyroid, bladder, melanoma and kidney cancers are less commonly seen.

In these patients, pain control with Sm-153 can be achieved.

Follow-up

Regular checks after cancer treatment are very important because recurrence is possible in all types of cancer and stages. After treatment, even though the cancer cells may seem to have been completely destroyed, the disease sometimes recurs for unidentified reasons, or else some cancer cells remain in the body.

In cases of recurrence, surgery, radiotherapy, hormone therapy or chemotherapy can be carried out.

Asking your doctor about any questions you may have in mind, and sharing your concerns with your cancer specialist, is very important for in terms of follow-up and the overall level and pace of recovery .

Home Care

Home care provides treatment and care services to patients in their residential and living space. The aim is to provide a continuity of care in patients' homes in terms of a process of care and recovery that begins in the hospital and to be together with relatives.

Liv Home Care Services determines visits from the first day of hospitalization, planning nurse visits after the patient has been discharged in line with the doctors' report. This ensures continuity of treatment and the safeguarding of the health and wellbeing of patients and their loved ones.

PAIN CLINIC

Algology (Cancer Pain and Treatment)

While there is a 38% probability of early pain in cancer patients, as the disease progresses, the ratio can be as high as 85%. Obviously, this increase can impair the quality of life.

While pain depends to some extent directly on the state and extent of the tumor, it is also related to treatment of tumors in 17% of cases, tumor disease in 9% of cases and non-neoplastic (migraine, diabetes) in 9% of cases.

In tumor patients, somatic pain and neuropathic pain can also occur. Cancer pain can be either constant or intermittent, or occur in sudden exacerbations (for example pain cause by sudden leakage).

Our Algology Clinic team work closely together with patients and their loved ones in treating cancer patients' pain with sensitivity and care.

SUPPORT PROGRAMS

Cancer Journey Program

Different adverse reactions and emotions may develop in patients diagnosed with cancer.

As with any other chronic disease, patients may experience emotional as well as physical distress upon diagnosis. Clinical psychologists specialized in Psycho-oncology offer sensitive treatment to patients at all stages using personalized and specific approaches. They assist patients and their relatives in adapting to changing roles, coping with emotions, strengths and limitations, and in terms of improving their learning skills.

If a Loved One Has Cancer...

Cancer diagnosis means the beginning of a difficult process for patients and their loved ones. Patients and their relatives need to keep their morale high, while those around the patient are also trying to be provide moral and material support. This can naturally be a challenging experience for patients' loved ones and relatives. When patients' negative emotions increase, or the treatment process is extended, patients' loved ones may undergo feelings of exhaustion and even hopelessness. Our team is aware of the importance of support in such cases. Individual psychotherapy for cancer patients and their relatives, family and couples therapy, group sharing and support services for children are provided within the scope of Cancer Journey Program at our Clinic.

Diet and Nutrition

There are many causes of cancer ranging from genetic factors to malnutrition. Studies indicate that the effect of nutrition on most cancers is at a ratio of 10% to 70%. While we cannot modify our genetic settings, we can help to prevent cancer by regulating our diet. Research shows that genetic as well as environmental factors have a bearing on cancer rates. Therefore, ones primary goal should be to review ones habits.

How can you take nutrition precautions?

- Do not forget to consume fruit and vegetables every day.
- Increase your fiber intake through increased consumption of dry legumes and whole grains
- Limit fat intake in your diet to help body weight control.
- Do not ignore the benefits of exercise.
- Moderate your alcohol intake.
- Take care to limit your salt consumption.

Cancer and Sex Life

Just as it can have an impact on any other area of life, cancer and cancer treatment affects a patient's sex life. The characteristics of the cancer, the stage at which the disease is diagnosed, the patient's personality traits and psychosocial issues such as the environment, are among the factors that determine how people will be affected by this disease. Patients can experience a reluctance to enter into sexual relations after the initial diagnosis, either to do with physical pain or discomfort, or for psychological reasons. They may also suffer difficulties in accepting the diagnosis or go through a process of denial. Chemotherapy side effects such as fatigue might also be evident, as well as factors relating to changes in physical form to do with age or treatment. These factors can also be associated with problems reaching orgasm, or pain during sexual intercourse. At Liv Hospital, an experienced psycho-oncology team including trained specialized psychologists cooperate with the patient and their loved ones during the course of personalized development programs.