



YOUR HEALTH

An Official Monthly Publication in English of the Indian Medical Association since 1952 for the people to propagate Health Awareness in the Community

Highlights

Stop the World's Biggest Killer

We Must Practice Healthy Food

Remission in Type 2 Diabetes Mellitus - Hope or Hype?

Eye aCancer: A General Overview

Cancer: Facts to Know

History of Barasat Cancer Research & Welfare Centre

Arthritis

Carpal Tunnel Syndrome (CTS)

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YOUR HEALTH

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HEADQUARTERS (KOLKATA)

Sir Nilratan Sircar IMA House, 53 Sir Nilratan Sarkar Sarani (Creek Row),
Kolkata-700014, West Bengal, Ph: 033-22364200/9123674412,
Email: yourhealthofima@gmail.com, yourhealthoffice@gmail.com



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Past National President, IMA



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Stop the World's Biggest Killer

Editorial



Dr. Kakali Sen
Hony. Editor, Your Health

Cervical Cancer: Introduction

Here, we will find some basic information about cervical cancer and the parts of the body it may affect.

The cervix is the lower, narrow part of the uterus in the female reproductive system. The uterus holds a growing fetus during pregnancy. The cervix connects the lower part of the uterus to the vagina and, with the vagina, forms the birth canal.

About abnormal cells in the cervix that can become cancer

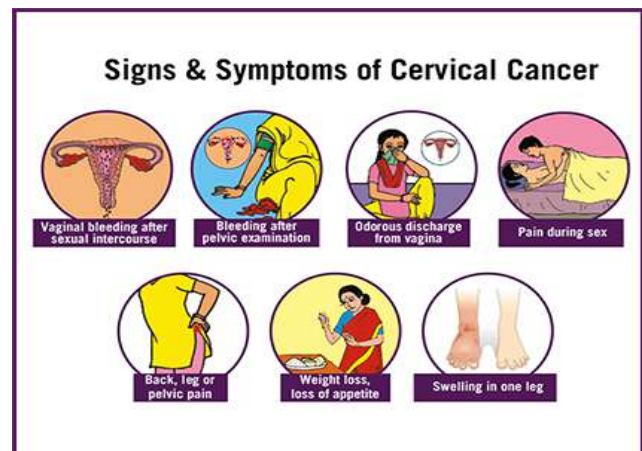
Cervical cancer begins when healthy cells on the surface of the cervix change or become infected with human papillomavirus (HPV) and grow out of control, forming a mass called a tumor. Long-term infection of HPV on the cervix can result in cancer, leading to a mass or tumor on the cervix. A tumor can be cancerous or benign. A cancerous tumor is malignant, meaning it can spread to other parts of the body. A benign tumor means the tumor will not spread.

At first, the changes in a cell are abnormal, not cancerous, and are sometimes called "atypical cells." Researchers believe that some of these abnormal changes are the first step in a series of slow changes that can lead to cancer. Some of the atypical cells go away without treatment, but others can become cancerous. This phase of precancerous disease is called "cervical dysplasia", which is an abnormal growth of cells. Sometimes, the dysplasia tissue needs to be removed to stop cancer from developing.

Often, the dysplasia tissue can be removed or destroyed without harming healthy tissue. However, sometimes a hysterectomy is needed to prevent cervical cancer. A hysterectomy is the surgical removal of the uterus and cervix. A loop electrosurgical excision procedure (LEEP) may also be recommended. LEEP uses an electrical current passed through a thin wire hook to remove the tissue.

Treatment of a precancerous area depends on the following factors:

- The size of the lesion and the type of changes that
- have occurred in the cells
- The patient's desire to have children in the future
- The patient's age and general health



- Preferences of the patient and the doctor

If the precancerous cells change into cancer cells and spread deeper into the cervix or to other tissues and organs, the disease is then called cervical cancer or invasive cervical cancer.

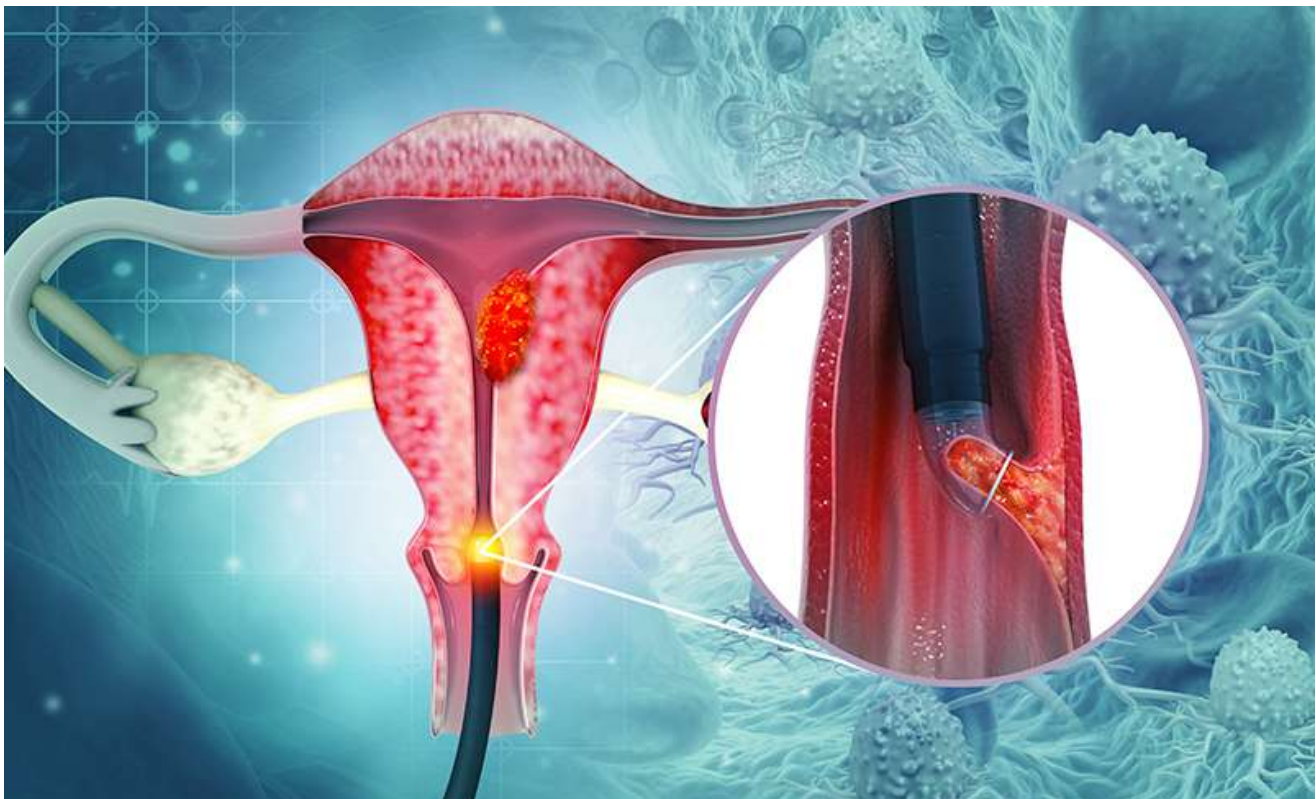
About Cervical Cancer

Cervical cancer can grow from the surface of the cervix seen in the vagina, called the ectocervix, or from the canal going from the vagina to the uterus, called the endocervix. There are 2 main types of cervical cancer

named for the type of cell where the cancer started. Other types of cervical cancer are rare.

- **Squamous cell carcinoma** makes up about 80% to 90% of all cervical cancers. These cancers start in the cells on the outer surface covering of the cervix.
- **Adenocarcinoma** makes up 10% to 20% of all cervical cancers. These cancers start in the glandular cells that line the lower birth canal in the internal portion of the cervix.

The Squamous and glandular cells meet at the opening of the cervix at the squamocolumnar junction, which is the location where most cervical cancers start.



We Must Practice Healthy Food

If you and your family are healthy, you will be happy and prosperous.

The key to a healthy diet is to eat the right amount of calories for how active you are so you balance the energy you consume with the energy you use. If you eat or drink more you'll put on weight because the energy you do not use is stored as fat. If you eat and drink too little, you will lose weight. You should also eat a wide range of foods to make sure you're getting a balanced diet and your body is receiving all the nutrients it needs. It's recommended that men have around 2,500 calories a day (10,500 kilojoules). Women should have around 2,000 calories a day (8,400 kilojoules).

Higher fibre starchy Carbohydrates : Starchy carbohydrates should make up just over a third of the food you eat. They include potatoes, bread, rice, pasta and cereals. Choose higher fibre or wholegrain varieties, such as Whole wheat pasta, brown rice or potatoes with their skins on. They contain more fibre than white or refined starchy carbohydrates and can help you feel full for longer.

Eat lots of fruit and Vegetables : It's recommended that you eat at least 5 portions of a variety of fruit and veg every day. Why not chop a banana over your



Dr. Samarendra Kumar Basu
Hony. Secretary, Your Health

breakfast cereal, or swap your usual mid morning snack for a piece of fresh fruit? A portion of dried fruit (which should be kept to **meal mes**) is 30g. A 150ml glass of fruit juice, vegetable juice or smoothie also counts as 1 portion, but limit the amount you have to no more than 1 glass a day as these drinks are sugary and can damage your teeth.

Eat more Fish: Fish is a good source of protein and contains many vitamins and minerals. Aim to eat at least 2 portions of fish a week, including oily fish. Oily fish are high in omega3 fats, which may help prevent heart disease. Most people should be eating more fish, but there are recommended limits for some types of fish.

Avoid saturated Fat and Sugar : You need some fat in your diet, but it's important to pay attention to the amount and type of fat you're eating. There are 2 main types of fat: saturated and unsaturated. Too much saturated fat can increase the amount of cholesterol in

the blood, which increases your risk of developing heart disease. Try to eat less saturated fat and choose foods that contain unsaturated fats instead, such as vegetable oils and spreads, oily fish and avocados. All types of fat are high in energy, so they should only be eaten in small amounts. Sugar: Regularly consuming foods and drinks high in sugar increases your risk of obesity and tooth decay. They can also cause tooth decay, especially if eaten between meals. Free sugars are found in many foods, such as: sugary fizzy drinks, sugary breakfast cereals, cakes, biscuits, pastries and puddings, sweets and chocolate, alcoholic drinks,

Eat less salt: Not more than 6g a day for adults : Eating too much salt can raise your blood pressure. People with high blood pressure are more likely to develop heart disease or have a stroke. Even if you do not add salt to your food, you may still be eating too much. About three quarters of the salt you eat is already in the food when you buy it, such as breakfast cereals, soups, breads and sauces.

Exercise : Regular exercise reduces your risk of getting

serious health conditions. Being overweight or obese can lead to health conditions, such as type 2 diabetes, certain cancers, heart disease and stroke. Being underweight could also affect your health.

Plenty of Water : You need to drink plenty of fluids to stop you getting dehydrated. The government recommends drinking 6 to 8 glasses every day. This is in addition to the fluid you get from the food you eat. All non-alcoholic drinks count, but water, lower fat milk and lower sugar drinks, including tea and coffee, are healthier choices. Try to avoid sugary and fizzy drinks, as they're high in calories. Remember to drink more fluids during hot weather or while exercising.

Never skip Breakfast : Some people skip breakfast because they think it'll help them lose weight. But a healthy breakfast high in fibre and low in fat, sugar and salt can form part of a balanced diet, and can help you get the nutrients you need for good health. A wholegrain lower sugar cereal with semi skimmed milk and fruit sliced over the top is a tasty and healthier breakfast.



Remission in Type 2 Diabetes Mellitus – Hope or Hyphe ?

Diabetes Mellitus – most common metabolic disorder – is increasing by leaps and bounds globally with estimated half a billion population of which 90-95% will have T2 Diabetes. Drivers for the twin epidemics of obesity and diabetes lie in complex interactions between obesogenic environment, a biological tendency for weight gain and an ageing population. Type 2 diabetes is conventionally considered a lifelong, progressive disease without cure. The concept of reversal of Type 2 Diabetes came in 1990 with introduction of metabolic surgery. This is further strengthened after the observation of Buchwald and colleagues in 2004 and 2009 studies with the systematic review and metaanalysis. The 2009 report brought out the concept of the term 'remission' in diabetes.

Remission of Type 2 diabetes is of increasing interest to professionals and patients, specially after the release of two recent trials in USA and UK through intensive life style measures like low calorie diet (LCD) and very low calorie diets (VLCD). The foundation of remission in diabetes is sustained weight loss.

Remission in Type 2 Diabetes

Diabetes remission is defined as “a healthy clinical state characterized by the achievement of glycated haemoglobin (HbA1C) level below the targeted level that is maintained for at least 3-6 months, with or without continued use of life style modifications and/or metformin, provided this is not due to complications, co-morbidities or concomitant therapy”. The criteria for remission include (a) weight loss (b) fasting plasma glucose less than 126mg% or HbA1C less than 6.5mg% on two occasions separated by at least 6 months after complete stoppage of pharmacotherapy.

The remission is further sub-classified as below

- Partial remission – sub-diabetic hyperglycemia (HbA1C < 6.5%) lasting for 1 year.
- Complete remission – normal glycemic measures without active pharmacotherapy for at least 1 year.



Prof. Dr. Sukumar Mukhopadhyay
Chairman, GD Hospital & Diabetes Institute

- Prolonged remission – complete remission for at least 5 years which amounts to 'cure'.

The basis of this division is primarily related to glycemic threshold with considerable heterogeneity depending on HbA1C than fasting and post prandial plasma glucose.

Pathophysiology of Remission

In 2008 the twin cycle hypothesis postulated that there were vicious cycles of fat accumulation in the liver and pancreas that lead to development of type 2 diabetes over at least a decade. Substantial weight loss of about 10-15Kg would lead to rapid fall in liver fat and normalization of insulin sensitivity and decrease to normal production of glucose production by the liver. There is also concurrent fall of triglyceride level with weight loss.

Moreover the DiRECT trial shows excess fat exposure causes beta cells to dedifferentiate, losing ability to secrete insulin – most likely down regulation of genes controlling insulin production. With significant weight loss and mobilization of pancreatic fat accumulation

shows patient potential for beta cell recovery with enhanced insulin action and remission of diabetes.

Eligibility Criteria

The remission of diabetes on diet restriction strategy depends on the following factors

- Relatively younger age group with higher BMI but no major complications.
- HbA_{1c} values are not too high for a prolonged period.
- Patient not on multiple pharmacotherapy and insulin.
- Duration of diabetes not very long.
However none of the studies irrespective of methodology could achieve 100% remission of diabetes mellitus. Hence choice of the candidates is fairly selective.

Therapeutic measures to achieve remission

1. Bariatric (metabolic) surgery : About 90% of patients following bariatric surgery remain free of diabetes for 10 years. The efficacy of surgery remain with type of surgery like Roux en Y bypass, vertical sleeve gastrectomy etc. achieving mostly weight and glycemic control. The metabolic surgery decreases insulin resistance due to

- Decreased dietary intake
- Mobilization of fat from liver and pancreas
- Alteration of gut hormone like Ghrelin, Leptin etc
- Alteration of gut microbiome

Post bariatric surgery patients need to be followed up for 2-5 yrs at least with proper dietetic discipline, occurrence of late complications like malabsorption, malnutrition, gall stone formation or reverting weight gain without calorie control.

Low caloric diet (LCD) or very low caloric diet (VLCD) –

2. Low caloric diet (LCD – 1200-1500 K. Cal /day) and very low caloric diet (VLCD – 400-800 K. Cal/day) are methods to induce weight reduction over a period of time. The DiRECT (Diabetes Remission Clinical Trial) and DiaDEM (Diabetes intervention Accentuating Diet and Entrancing Metabolism) are large randomized trials which have shown benefits of diet restriction to induce remission in diabetes in significant number of obese individuals. There was significant weight loss within first year. However medical supervision is

necessary to check for hypoglycemia, electrolyte disturbances and adherence problems. In long standing diabetes with complication results are conflicting and erratic.

3. Low carbohydrate diet – Recently this is highlighted as a method of weight loss than prevalent low fat diet. The carbohydrate intake is thus restricted to < 130gram a day (26% of total calories) with majority of the energy requirement being derived from dietary fat or mobilized body fat stores from liver and pancreas. Low carbohydrate diet is more sustainable with weight loss and normoglycemia for a period of two years. However follow up is very much needed to get the results.

4. Moderate level exercise and restriction of alcohol are also important measure to sustain weight loss and glycemic control.

5. Artificial intelligence (AI) based application of Twin precision Treatment (TPT) technology in the management of diabetes which is basically individualized education about nutrition, sleep, activity to control the metabolic parameters and achieve remission. This requires careful study and interpretation.

Unmet Need

- Majority of studies have short term follow up – less than 2-3 years.
- Prolonged sustainance of euglycemia is often difficult with nonadherence leading to rebound weight gain and hyperglycemia. Hence 'cure' of diabetes is elusive.
- Long term data on morbidity and mortality on weight loss regime are not available.
- Selection of ideal candidate for weight loss regime based on scoring is not yet available.
- No predictive markers for ideal response to therapy are available

Key Messages

- Type 2 diabetes develops when personal tolerance for fat levels in the liver and pancreas are exceeded.
- Weight loss as per study well help return to non-diabetic blood sugar in early years after diagnosis.
- Long duration of diabetes with complications and

high HbA1C are not ideal for drug free remission.

- Remission is durable provided weight regain is avoided.
- Prolonged supervision of patients and follow up on weight loss regime by Bariatric surgery or LCD or VLCD are necessary for any success or failure of therapy.

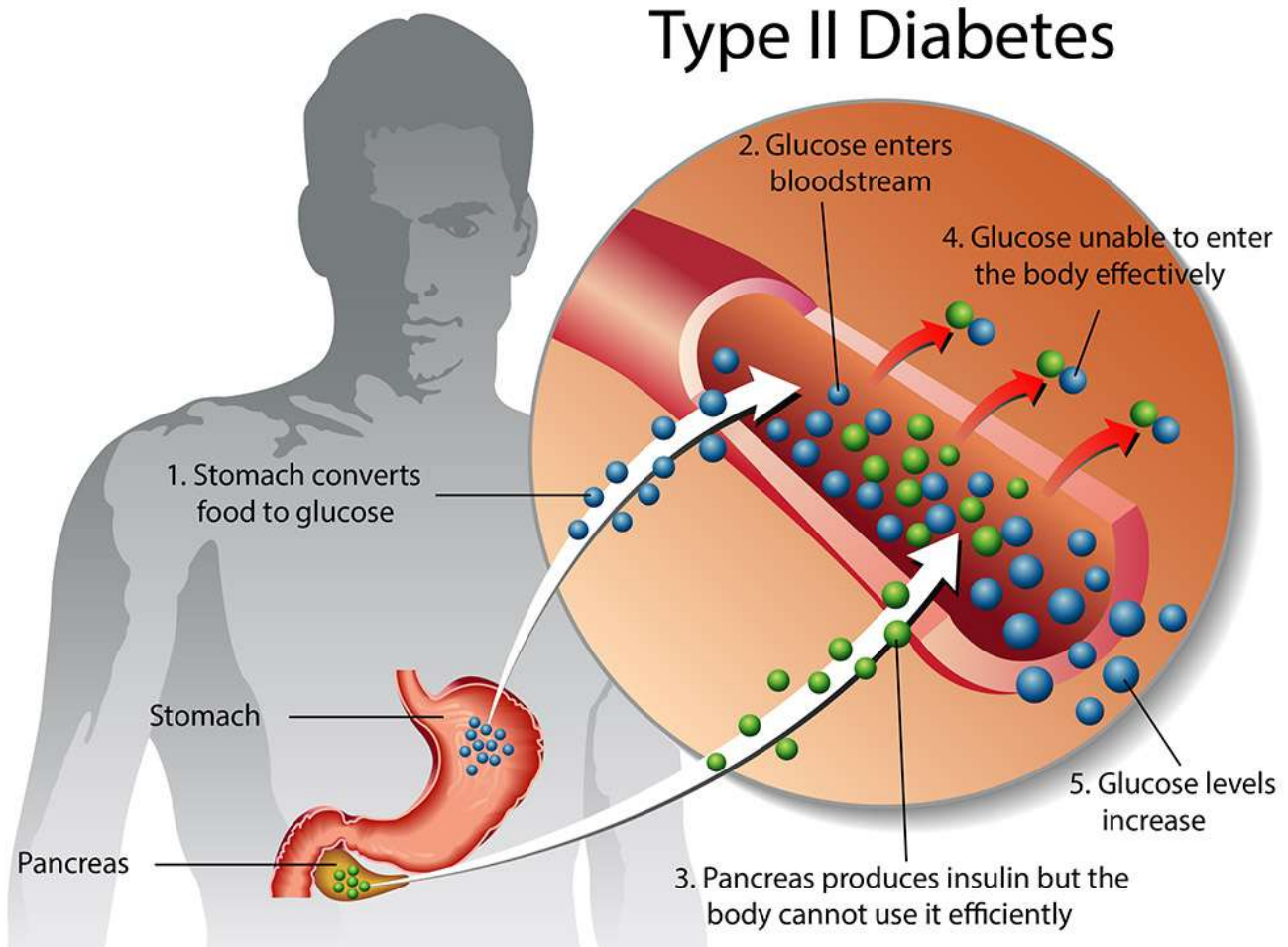
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Type II Diabetes



Eye Cancer: A General Overview

Whenever someone or their family members face with cancers, a long list of questions floods their mind, which they expect their doctors to attend to. Eye cancers are no exception. The questions which are important at that juncture are, if the cancer is curable, what is the survival rate, how long is the treatment process, and above all, will the cancer affect eyesight. We also wonder if the eye cancer is preventable

Eye cancer, one of the rare form of all cancer, is broadly classified as primary eye cancer if it starts in the eye and on the other hand, sometimes cancer can spread from another part of the body, such as lungs or breast, to the eye, when we call it secondary eye cancer or metastatic eye cancer.

'Ocular' is the medical term used for the eye. So, when the cancers start from inside of the eye, they are called intraocular, whereas extraocular cancers are orbital and adnexal cancers. Orbital cancers form in the orbit, or in the muscles and nerves that move the eyeball. Adnexal cancer forms in supporting tissues, including the eyelids and tear glands.

Most of the risk factors, such as age, skin colour, iris colour, genetic predisposition, are nonmodifiable risk factors for eye cancers, exception is exposure to UV rays. Hence wearing uv protected glasses and large hat during outdoor activities might help in prevention of development of some ocular cancers to some extent.

Important intraocular cancers are Melanoma, Retinoblastoma and Lymphoma of the eye. Though Melanoma commonly starts from the uveal tissue - choroid, iris or ciliary body, rarely they can start extraocular site at lid or conjunctiva. Retinoblastoma is the cancer originating from retina and is mostly seen in young children. Lymphoma of the eye is a rare type of eye cancer originating from lymphocytes and seen in elderly population, who have compromised immune system. Many patients with lymphoma of the eye also have primary central nervous system lymphoma



Dr. Sugato Paul
MBBS, DO, MS, FRCS
Visiting Eye Consultant

Barasat Cancer Research & Welfare Centre

(PCNSL). PCNSL is a cancer that may affect various parts of the central nervous system, including brain, spinal cord and cerebrospinal fluid.

Important extraocular cancers arising from eye lid are Basal cell carcinoma (BCC), squamous cell carcinoma Sebaceous gland carcinoma Basal cell carcinoma (BCC) is a cancer often caused by sun exposure. It is also called a 'rodent ulcer'. Sebaceous gland carcinoma often mimics chalazion, which is a benign condition. Multiple chalazion, or recurring chalazion in elderly patient should raise the suspicion of sebaceous gland carcinoma. Other two rare extraocular carcinoma are lacrimal gland carcinoma and rhabdomyosarcoma

Unfortunately, many patients with eye cancer don't experience symptoms unless the cancer is in a location that interferes with vision or appearance. Many benign eye conditions share same symptoms with eye cancer. The most common symptom of eye cancer is painless vision loss. Other vision problems that may be signs of eye cancer include shadows, flashes of light in vision,

blurred vision, a dark patch that's getting bigger, bulging of one eye (proptosis), a lump on eyelid or eye that's increasing in size and rarely pain in or around the eye and double vision.

Once ocular cancer is suspected, general ophthalmologist should refer the patient to his ocular oncologist colleague, if possible, as they are more conversant with the management of these eye conditions. Apart from thorough eye examination and general examination, various ocular imaging such as Ocular Ultrasound, especially in diagnosing intraocular melanomas, and, Fluorescein angiography is required often to diagnose and plan the treatment. Patient may need additional imaging procedures and pathological tests and genetic testing if there is suspicion of the cancer's spread outside the eye and also to decide the staging of cancer and planning the management. Those imaging procedures are Ultrasound, Chest X-ray, CT scan, MRI, PET scan, bone marrow test and lumbar puncture to test the cerebrospinal fluid. Tissue sample in form of incisional biopsy or excision biopsy or Fine Needle Aspiration Cytology (FNAC) or fluid taken from aqueous humor or vitreous is often utilised for the diagnosis. Once the diagnosis is made, which often involves multidisciplinary team approach, treatment option is planned.

Various treatment modalities are currently available for treating eye cancers. They are Radiation therapy, Surgery, Laser therapy, Chemotherapy and Immunotherapy. Decision of which treatment to be used depends on the type, size, location and spread of the cancer along with the general health and level of fitness of the patient. As with many types of cancer, the earlier the cancer is diagnosed, the easier it is to treat and possibly cure it.

For slow-growing eye cancers or if the diagnosis isn't certain, especially if treatment risks, such as loss of eyesight, outweigh the benefits, initial conservative approach of close observation is also a treatment modality.

Radiation therapy is one of the most common treatments for eye cancer. Brachytherapy, External

beam radiation therapy (EBRT) Proton beam radiation therapy are the options available in specialised centers.

Surgery is a common treatment option, especially for those cancers that haven't spread. Surgical procedures available are sometime vision sparing, such as Iridectomy, Iridocyclectomy, Transscleral resection (all of these are for melanomas), and can also lead to loss of vision in one eye when Enucleation i.e. Removal of eyeball for large tumors or Orbital exenteration i.e. Removal of entire eyeball and some of the surrounding tissue if the cancer has already spread into structures surrounding the eyeball. Both enucleation and orbital exenteration are done after thorough counselling and cosmetic surgery later with matching artificial implant and psychological support of the patient and relatives are also very important aspects in these forms of extensive treatment.

The most common type of Laser treatment involved in eye cancer treatment is transpupillary thermotherapy (TTT). During the procedure, infrared light delivers concentrated heat toward the tumor, destroying cancer cells.

Immunotherapy treatments help the immune system to identify and destroy cancer cells more effectively. It is a common treatment for cancer, whose spread can't be surgically removed.

Chemotherapy isn't a common treatment for eye cancer, but may be utilized if the cancer hasn't responded to other treatments or if it spreads to other distant areas of the body. Intravitreal chemotherapy, where the chemotherapy drug is injected in vitreous is used for ocular lymphoma is now becoming a common treatment modality.

Prognosis, or likely treatment outcome, depends on many factors, including the tumor's size, location and how much it's spread. The 5-year relative survival rate for eye cancer in the U.S. is 80%. If the cancer is diagnosed at an early stage, the 5-year relative survival rate is 85%.

Cancer: Facts to Know

Cancer is the second leading cause of death globally after cardiovascular diseases. Patients with cancer generally have a poorer prognosis in low-income and middle-income countries, including India, because of relatively low cancer awareness, late diagnosis, and the lack of or inequitable access to affordable curative services compared with patients in high-income countries. India has a population of 1.3 billion spread across 29 states and

seven union territories, and many of the states are as large as other countries, with varying degrees of development, population genetics, environments and lifestyles, leading to a heterogeneous distribution of disease burden and health loss.

The following facts regarding cancer have influenced planning of cancer prevention and treatment in the past and need to be seriously considered in future planning of cancer treatment strategy as well

- One third of Cancers are preventable
- Large numbers of common cancers are due to life style factors, as cancer of breast and colon
- Cancer involves almost every part of the body
- Cancer is a growing health concern due to:

Increased life expectancy and

Lifestyle changes

Cancer is the cause of 12% of all deaths

- In India 1.5 – 2 million estimated cancer cases at any point of time
- Every year 8 lakhs new cases are detected in India
- Every year 5.5 lakhs cancer patients die in our country
- 70% cancer cases are detected at late stage when cure is not possible
- **Early detection of cancer helps in complete cure of some cancers, like mouth, larynx, breast, prostate, testis etc.**
- **Prevention by taking some precautionary measures is the best way to prevent the common cancers, like cancer of cervix and mouth**



Dr. Litan Naha Biswas
 MBBS, MD (Radiotherapy)
 Visiting Radiation Oncologist
 Barasat Cancer Research & Welfare Centre

There are some Common Misconceptions about cancer which need to be addressed for general awareness of the people, are elucidated below.

- Cancer is not contagious
- Cancer is not caused by an injury, such as a bump or bruise
- Cancer does not always run in families
- Cancer does not spread after having a biopsy or surgery
- Exposing cancer to air will not cause disease to spread

Facts regarding cancer prevalence in India:

Crude Incidence: 45-96 / 1 lakh population (Approx. 1 in 1000)

Pattern of Cancer Occurrence in India:

<u>MALES</u>	<u>FEMALES</u>
Lung	Cervix
Mouth	Breast
Larynx and Hypopharynx	Ovary

Oesophagus

Mouth

Prostate

Gall Bladder

Recent trends show increasing number of breast cancers in young women in urban population, making it the commonest cancer of women in Metro cities of Mumbai and Kolkata. There are also increased cases of oral cancer in women due to tobacco chewing habits

Seven warning signals of cancer:

- **Change in bladder & bowel habits**
- **Sore throat not healing**
- **Unusual bleeding or discharge P/V in women, especially in post-menopausal age**
- **Thickening or lump in breast or anywhere in the body**
- **Indigestion and difficulty in swallowing in elderly people**
- **Obvious change in wart or mole**
- **Nagging cough or hoarseness of voice, especially in men above 50 yrs**

Screening and early detection of cancer is of paramount importance in cancer control in developing countries, like India

What is cancer screening?

- Checking for cancer in a person who does not have any symptom of the disease is called screening.
- Medical screening tests are effective tools of early detection of cancer.
- A few types of cancer have specific tests that aid in detecting cancer.

Screening tests for common types of cancer:

- Breast – mammogram and breast self examination (BSE)
- Cervix - Pap Smear test
- Colon - fecal occult blood test, colonoscopy, sigmoidoscopy, digital rectal exam
- Prostate - digital rectal exam and serum PSA

Principles of cancer screening in common cancers:

1) Mammogram every year after age 40 to find breast changes

2) Cervical cancer screening should begin 3 years after a woman begins sexual intercourse, but not later than age 21.

3) Women should have a Pap test at least once every 3 years.

4) Serum PSA annually after 50 yrs for men

Early detection of cancer:

Why early detection is important ?

- Disease detected at early stage produces better results on treatment and even cure
- Advanced disease shows poor result on treatment
- Advanced disease leads to financial and psychological burden

Diagnosis of Cancer:

Done with the following steps:

Biopsy/ FNAC: for histological or cytological examination

Imaging studies-X-Ray, MRI, CT Scan, PET Scan, Special studies

Tumour markers in blood as serum CEA, PSA, CA-125, AFP

Staging of Cancer:

- Staging is the process that tells the doctor how far the cancer has spread in the body.
- The staging of cancer is important for the following reasons:
 - Determines extent of the disease and patient's prognosis
 - Treatment is determined by the stage

Treatment in cancer depends on...

- Type of cancer
- The size and location of tumor
- Stage/extent of the disease
- Patient's general health
- Other factors

Modalities of treatment:

- Surgery
- Radiotherapy

- Chemotherapy
- Hormone therapy
- Biologic therapy

Local or systemic treatment?

- Local treatment affects cancer cells in the tumor and the area near it and done by
 - Surgery and
 - Radiation Therapy
- Systemic treatment kills the cancer cells in circulation all over the body and comprises the following:
 - Chemotherapy
 - Hormone therapy
 - Biological therapy

Surgery:

- Removal of the cancerous tumor and the surrounding tissue and lymph nodes draining the tumor

Radiation Therapy:

- The use of high-energy rays to kill cancer cells
- Types - external (outside the body) and/or internal (implanted in the body)
 - Chemotherapy:
- The use of drugs to kill cancer cells. Can be given intravenously (through a vein), by mouth (pills), through shot (an injection in the skin tissue or muscle),
- or topical (applied on the skin)
 - Hormone Therapy:
- Used against certain cancers that depend on
- hormones for their growth like
 - Breast cancer
 - Prostate cancer
- Anti-hormone treatment can cause these cancers to go away or be controlled for a time
- Biological Therapy (Immunotherapy): Helps the body's natural ability (immune system) to fight disease or protects the body from some of the side effects of cancer treatment

Biological therapy may:

- Stop or slow the growth of cancer cells
- Makes it easier for the immune system to destroy cancer cells

- Keeps cancer from spreading to other parts of the body

IMPROVEMENTS IN TREATMENT OF CANCER

Cancer earlier was a death warrant but now

- Can be managed very well if detected early
- Even if not cured, patient can have a good quality of life and extended survival
- Standard and modern treatment facilities available in the city now

However, Awareness & Early detection are the Keys !!!

And of course the Judgment matters !

To get the best results out of these advancement we have to apply the technology in appropriate situations

Radiotherapy mainstay of treatment:

- Uterine Cervix: Treatment of choice
- Larynx and Hypopharynx
- Nasopharynx and Nasal Sinuses
- Oropharynx
- Oesophagus: upper and middle thirds
- Seminoma of testis (for secondaries)
- Skin tumours: Squamous and Basal cell carcinoma
- Anal Canal

Surgery mainstay of treatment:

- Oral cancer
- Lower third of oesophagus
- Stomach and colo-rectal cancer
- Brain tumours
- Sarcomas
- Breast cancer

Chemotherapy mainstay of treatment:

- Leukemia
- Lymphoma
- Plasmacytoma
- Germ cell tumours
- Pediatric malignancies
- Choriocarcinoma

History of Barasat Cancer Research & Welfare Centre



Dr. Tarun Kr. Das
MBBS, FCGP, Dip. Diabetology
Sr. Medical Officer
Barasat Cancer Research & Welfare Centre

Barasat Cancer Research and Welfare Centre (Hospital) is a Non Government Organization for healthcare, specially for cancer patients of poor and downtrodden people of the society. The organization was established on **2nd June 1997**.

Activities: - Cancer awareness, screening, detection and treatment.

Awareness activities have been performed by organizing number of cancer awareness camps in towns and remote villages every year. Awareness programme first started in 1991. Screening and detection activities started from 1997 after establishing hospital in 1997. More than 500 camps have been organized till date both in home and abroad.

We organized about 100 cancer awareness, screening

and detection camps in Bangladesh during the period from 2014 to 2019.

BCRWC started cancer surgery and chemotherapy from 1997. Radiotherapy was added to fulfill the complete cancer care service with an imperial **inauguration of radiotherapy unit by the then president of India Dr. A.P.J. Abdul Kalam in 2004**.

Investigations like pathology, histopathology, hematology, radiology (X-ray, CT scan), endoscopy, ultrasonography etc. are done under one roof. All investigations cost are about the one third of Kolkata market rate.

OPD awareness and screening cost nothing. Cancer surgery and radiotherapy (package Rs. 20,000) rate is minimum (within the reach of poor people).

BCRWC Hospital operates a Component Blood Centre of its own. The Blood Centre was established in 2006.

Since its inception BCRWC Hospital has saved and /or lengthen the life span of thousand of cancer stricken people.



Arthritis

Arthritis is a common condition that affects the joints, causing pain inflammation and stiffness.

We can broadly divide arthritis into two categories- Degenerative and inflammatory.

Degenerative can be age related-the most common example is Osteoarthritis of Knee in the elderly, or it may be secondary to trauma, particularly following intraarticular fractures.

Osteoarthritis (OA) is the most common form of arthritis and occurs when the protective cartilage on the ends of the bones wears down over time. This can result in pain, swelling, and difficulty moving the affected joint.

Four major factors causing OA are-Age, Obesity, Poor muscle power and life styles affecting cartilage loss.

In the early stage, knee osteoarthritis presents with stiffness and palpable crepitus. At a more later stage there may be effusion, even audible crepitus and some form of deformity. At the end stage there will be difficulty in walking even in plain land with gross deformity. Tenderness of joint line is present throughout all the stages.

The diagnosis is clinical as well as an AP view Xray of knees in standing position is essential. Haematological parameters are usually within normal limits. Standing AP Xray only can give us idea about how much cartilage is already damaged and it guide us for further treatment.

As we have no control over aging, we can control our body weight, we can also modify our life style i.e.; avoid those postures which can cause pressure on cartilage and we can also do some regular exercise.



Prof(Dr) Kiran Kr Mukhopadhyay
Professor Dept of Orthopedic Surgery
NRS Medical College Kolkata

In early stage of OA ,along with Exercise and control of body weight, we can use local application of Diclofenac sodium. Oral use of Aflapin and UC II(Undenatured Collagen type II) and also intraarticular use of Hyaluronic acid have proven efficacies to control or arrest the progression of damage to the cartilage. But in late stage we have to opt for surgical options. In pure medial compartmental OA with varus deformity we have option of High Tibial Osteotomy but in advanced OA we have to opt for Total Knee Replacement (TKR). As the condition of the degenerated cartilage cannot be reversed in OA, proper management and treatment can help reduce pain and improve quality of life for individuals with the condition.

Next common cause of Arthritis is Rheumatoid Arthritis (RA).

Rheumatoid arthritis is an autoimmune disease where the immune system mistakenly attacks the joints, causing inflammation and damage. It can affect multiple joints throughout the body and often leads to

joint deformity and disability if left untreated.

The major differences between OA and RA are, unlike OA, RA usually affects younger generations, usually affects smaller non-weight bearing joints and pain is more severe after taking rest, mostly in the morning. And there are some supportive information can be obtained from Haematological investigations like Rheumatoid factor, anti CCP, elevated ESR and CRP.

It is an autoimmune disease and can be treated primarily by medicines which are broadly grouped as DMARD (Disease Modifying Anti Rheumatoid Drugs) along with NSAIDs, There are option of newer biologics also but should be used with caution and are costly too.

Gouty arthritis, Psoriatic arthritis are relatively less common cause of arthritis affecting general population. Gout is a type of arthritis that occurs when uric acid crystals build up in the joints, leading to sudden and severe pain, swelling, and redness. It most commonly affects the big toe, but can also affect other joints such as the ankles, knees, and wrists.

Psoriatic arthritis is a type of arthritis that occurs in some people with psoriasis. These conditions have different causes and symptoms, but all involve inflammation and damage to the joints.

Conclusion:

Arthritis can have a significant impact on a person's

quality of life, making it difficult to perform everyday tasks and participate in activities they enjoy. Treatment for arthritis aims to reduce pain and inflammation, improve joint function, and prevent further damage. This can include medications, physical therapy, lifestyle changes, and in some cases, surgery.

Treatment for arthritis typically includes a combination of medication, physical therapy, and lifestyle changes. Medications such as nonsteroidal anti-inflammatory drugs (NSAIDs), corticosteroids, and disease-modifying antirheumatic drugs (DMARDs) (For Rheumatoid Arthritis) may be prescribed to reduce inflammation and manage pain. Physical therapy can help improve joint mobility and strengthen the surrounding muscles. Lifestyle changes such as maintaining a healthy weight, exercising regularly, and avoiding activities that put excessive stress on the joints can also help manage symptoms.

It is important to raise awareness about arthritis to promote early diagnosis and treatment, as well as to educate the public about the impact of the condition on individuals and society as a whole. This can help reduce the stigma associated with arthritis and improve support and resources for those affected.



Carpal Tunnel Syndrome (CTS)

INTRODUCTION- Carpal tunnel syndrome is an entrapment neuropathy of the median nerve at the wrist joint resulting in numbness, paresthesias, weakness and atrophy of intrinsic muscles of the hand. The median nerve is compressed within the carpal tunnel, approximately 1 to 2 cm beyond the distal wrist crease.

The most common compressive neuropathy of the upper limb. More common in women and is often bilateral but more severe in the dominant hand.

BASIC ANATOMY OF CARPAL TUNNEL – The carpal tunnel is a narrow passageway on the anterior aspect of the wrist joint and it mainly consists of 9 tendons (Flexor pollicis longus tendon, 4 tendons of Flexor digitorum superficialis and 4 tendons of flexor digitorum profundus), surrounded by a synovial sheath and one median nerve. The carpal bones are arranged concavely on the palmar aspect and the flexor retinaculum forms the boundary of the carpal tunnel. The proximal boundary of carpal tunnel is formed by pisiform bone on the ulnar side. The Flexor Carpi ulnaris tendon, ulnar nerve and artery lie close to the pisiform bone but superficial to the flexor retinaculum and hence not a part of the carpal tunnel. Below the flexor retinaculum, the median nerve lies superficially.

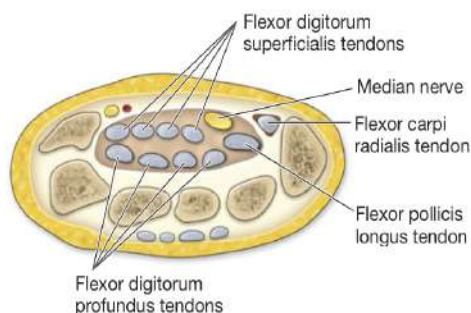


Fig- Wrist cross section showing carpal tunnel

RISK FACTORS-

1. Bony abnormalities of the carpal bones, acromegaly
2. Forearm and wrist fractures (Colles and scaphoid fracture), dislocations or subluxations of carpal bones, local tumours (Neuroma, lipoma, ganglion cyst) or may



Dr. Sourav Dhar
MBBS, DNB (PM&R), FIPM,
Certified in MSK USG (EULAR)
Senior Resident, AIIMS Bhubhaneswar.

be due to post-traumatic arthritis.

3. Other conditions include Diabetes mellitus, Rheumatoid arthritis, Gout, Tenosynovitis, Pregnancy, Thyroid disorders, Reynaud disease etc.

CLINICAL FEATURES - Paresthesias and numbness in the median nerve distribution, affecting the palmar aspect of the thumb, index finger and radial half of the ring finger.

Symptoms are worse at night causing nocturnal waking and relieved by flickering of hand. Occasionally patient complains of pain that radiates up to the forearm or even up to the shoulder. Weakness of muscles supplied by the Median nerve in the hand can be perceived as a difficulty opening jar or buttoning. Weakness involved primarily thumb abduction and opposition. In severe cases, atrophy of the Thenar eminence can be seen.

HOW IS CARPAL TUNNEL SYNDROME DIAGNOSED?

- **PHYSICAL EXAMINATION** – Starts with visual and manual inspection of the hand and wrist looking for any obvious abnormalities and comparing the affected and unaffected sides. The range of motion is evaluated. Special tests include- a) **Phalen test**- Which involves forced flexion of the wrist to 90 degrees for 1 minute. Positive test results reproductions of symptoms of CTS. b) **Reverse Phalen test**- A forced extension of the wrist to 90 degrees. If symptoms of CTS appear then it's a positive test. c) **Tinel Sign**- Light tapping along the median nerve from proximal to distal. Electric tingling response in fingers indicates positive results. d) **Carpal tunnel compression test (Durkan test)**-Direct compression of the median nerve at the carpal tunnel. The result is positive if paresthesias within 30 seconds. e) **Two-point sensory discrimination test**-Comparison of two-point discriminating sensory ability of the median nerve with that of the ulnar nerve distribution of the hand.

Carpal Compression Test



Phalen Sign



Reverse Phalen Sign



Tinel Sign



- **INVESTIGATIONS**- a) Electromyography (EMG) and Nerve conduction studies (NCS) can confirm the diagnosis; and determine the severity of nerve damage. Electrodiagnostic testing is the gold standard test for CTS. Sensory abnormalities are typically seen earlier than motor abnormalities. Median sensory latency is prolonged. Median motor responses are affected in more severe diseases. b) Ultrasonography of wrist – 1) May show flattening of the median nerve at the level of the hamate bone. 2) Volar bulging of the flexor retinaculum 3) Enlargement of the median nerve as

it enters the carpal tunnel 4) Cross-sectional area of the median nerve is greater than 10 mm² at the pisiform bone level. C) X-rays of the wrist to rule out degenerative disease or fracture. D) Blood test (To rule out rheumatological disease or endocrine disturbances) – CBC, ESR, THYROID PROFILE, ESR, Rheumatoid factor and Blood Sugar Level. E) MRI of the wrist is usually not done but we can be useful in suspecting space-occupying lesions of the wrist.

TREATMENT- After diagnosis, treatment should begin with conservative management which includes physical therapy, orthotic management, medical treatment and surgical intervention.

Physical Therapy-a) **Mobilize restricted joints, connective tissue and muscle/tendon** - Mobilize carpals if restricted, tendon gliding exercise and median nerve mobilization exercise b) **Improve muscle performance**- Gentle multi-angle muscle setting, progress to resistance and endurance. C) **Progressive functional independence**- Involve patient in all aspects of the program, self-monitoring of symptoms. d) **Modality**- ultrasound therapy may provide short-term relief in some patients. Some studies show Short-wave diathermy (SWD) can produce significant short-term relief in mild to moderate CTS. Low-level laser therapy may also have some benefits. e)

Other- lifestyle modifications, which include decreasing repetitive activity, ergonomic modification and icing, may also provide short-term relief in some patients.

Orthotic Management- The use of a wrist splint in a neutral position helps in reducing symptoms of CTS. Usually, full-time use of wrist splint provides greater results than night-time use only.

MEDICAL MANAGEMENT- Non-steroidal anti-inflammatory drugs (NSAIDs) and neuropathic pain medications are most commonly used along with splinting and others. Other underlying conditions such as diabetes, hypothyroidism, or rheumatoid arthritis should be treated accordingly. The use of oral short-term steroids (Prednisone) has some beneficial effects but not more than injectable steroids.

Injections- Local corticosteroid injection into the

carpal tunnel produces very good long-term results where other conservative management fails. Ultrasound-guided injection of local steroids produces better results in some studies although anatomical landmark basis injection technique also produces good results. For injection into the carpal tunnel, 1 ml of steroid (Triamcinolone, 40 mg/ml) can be injected under sterile conditions.

Landmark technique- The needle should be placed proximally to the distal wrist crease and ulnar to the Palmaris longus tendon and the direction should be dorsally and angled 30 degrees. Then we need to slowly inject the drug.

Ultrasound-guided technique- The patient's affected arm should be rested comfortably on the table with a Towel underneath the wrist for mild wrist extension. An ultrasound probe is placed transversely (short axis) to the median nerve at the wrist and we have to scan proximally to distally until the nerve is identified at the level of pisiform bone under the transverse carpal ligament. Then the needle should be inserted ulnar side of the wrist crease parallel to the transducer for optimal visualization of the needle. Once the needle

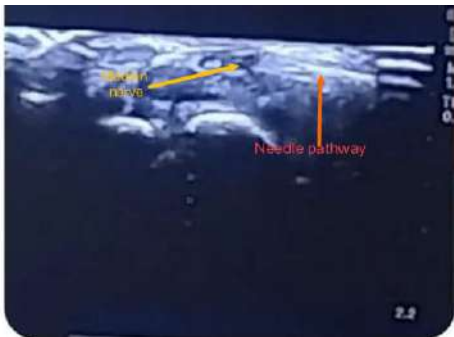


Dr Nahid Reza
MBBS,MD,FIPM

placement is confirmed we can inject the drug slowly.
Ultrasound-guided Hydodissection of the median nerve- The minimally invasive procedure of injecting fluid into anatomical space to facilitate dissection and adhesiolysis. Ultrasound-guided injection of dextrose or platelet-rich plasma (PRP) in between the median nerve and transverse carpal ligament and the underlying tendon may interrupt the adhesion of the median nerve and reduce the symptoms.

Surgical Procedure – Surgery is indicated only when conservative treatment fails in case of mild and moderate CTS and if there is severe and rapidly progressive weakness and atrophy of muscles or there is a mass lesion causing the median nerve compression. Mini palm open carpal tunnel release or extended open carpal tunnel release are the main 2 techniques. Active movement of the wrist and hand should be started postoperatively to prevent joint stiffness and to ensure adequate glide of tendons and median nerve in the carpal tunnel, strengthening is initiated at 3 to 4 weeks as the wound heal and inflammation resolves.

Usg guided CTS Steroid Injection



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Your Health

Sir Nilratan Sircar IMA House
53, Sir Nil Ratan Sircar Sarani,
(Creek Row), Kolkata -700 014

Tel:(033)2236-4200,

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