

Pink MARS (Meghna, Anayel, Rai (Anushka), Sameeran)

**Understanding Cancer Treatments and How They Affect
Individuals With Cancer**

**Presented by: Anushka Bhattacharya¹, Anayel Zechariah²,
Meghna Roy³, Sameeran Nasipuri⁴**

**Odell Elementary School¹, Bradford Preparatory School²,
Grand Oak Elementary School³, Cox Mill Elementary School⁴**

6-9 age group

***Corresponding author:
Dr. Lopamudra Das Roy
Questions, please reach out:
lopa@breastcancerhub.org***

Abstract

Background: Cancer is when the human body produces too many cells that start dividing in an uncontrolled way and tumors start forming and spreading in different organs (like lungs, skin etc.). This then affects the normal functions of the organs

Aim: There are many types of cancer treatment. These depend on the type of cancer and how far it has progressed. This research focuses on understanding these treatments and their side effects

Methods: We reviewed different sources of information on the internet for information about cancer treatments and their side effects. These included government and foundation websites which were mostly not commercial

Discussion: Cancer treatments have a number of side effects. These can cause a lot of stress for patients and perhaps lead them to stop their treatment

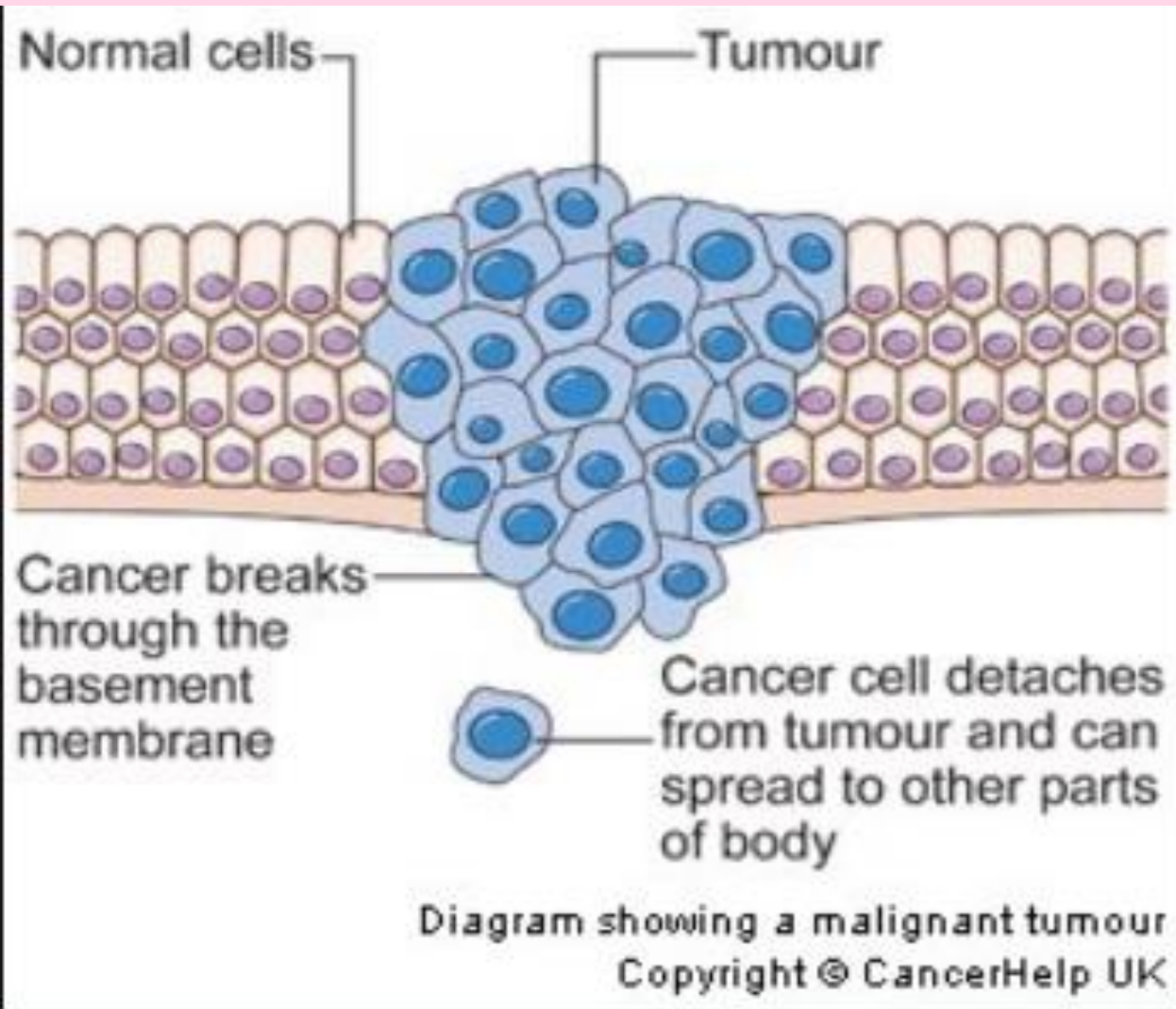
Conclusion: It is important to understand how to manage these side effects, so that patients may benefit from their treatments and feel better, and lead to fewer deaths due to cancer

What is Cancer?

Cells

A cell is the smallest unit of life. No living thing can survive without cells

A normal body constantly produces new cells through a process called cell division in order to replace dying cells



When a person's body produces too many cells that start dividing in an uncontrolled way and the body doesn't know where to put them in different organs (like lungs, skin etc.), tumors start forming in them. Once tumors start spreading and affecting the normal functions of the organs, the person is considered to have developed **Cancer**

Cancer in Layperson's Terms

Why does Cancer happen ?

- Body cells start to grow and divide abnormally
- Cancer cells don't interact with other cells as normal cells do
- Normal cells are either repaired or die (undergo apoptosis) when they are damaged or get old. Cancer cells are either not repaired or do not undergo apoptosis

The most common cancers are:

Types Of Cancer	Number Of Cases (Million)	Percent(%)
Lung	2.09	12%
Breast	2.09	12%
Colorectal	1.80	10%
Prostate	1.28	7%
Skin	1.04	6%
Stomach	1.03	6%
Other	8.77	48%
Total	18.1	

2. <https://www.cancer.ca/en/cancer-information/cancer-101/>
3. <https://www.who.int/news-room/fact-sheets/detail/cancer>



Types of Cancer Treatment

There are many types of cancer treatment which depend on the type of cancer and how far it has progressed. These include:

- Hormone therapy
- Radiation therapy
- Targeted therapy
- Immunotherapy
- Chemotherapy
- Surgery
- Reconstructive Surgery

Some people with cancer will have only one treatment. Most people will have some treatments together, such as surgery with chemotherapy and/or radiation therapy

Why are there differences in Cancer treatment?

- One out of 6 people die from cancer worldwide
- 70 out of 100 deaths from cancer are in countries that are not so wealthy or rich
- In countries, that are not so wealthy, patients may not even know that they have cancer
- They also may not receive treatment for their cancer in time to stop it from getting more serious
- This is because:
 - They may not have enough doctors and hospitals for cancer care in these countries
 - Other diseases get more importance than cancer
 - They may not know that they should go to see a doctor if they find anything unusual happening to their bodies
- All these reasons may cause a higher number of deaths from cancer in these countries

Side Effects of Cancer Treatment

Cancer treatments can cause some side effects. These are problems that occur when treatment affects healthy tissues or organs. These include:

- Change in taste buds. Food tastes too sweet, too bitter, too salty
- Memory loss, forgetfulness, confusion
- Weight loss or gain
- Insomnia (Difficulty sleeping and staying asleep)
- Dry mouth
- Fatigue and pain
- Feeling nausea and vomiting



Hormone Therapy

Hormone or endocrine therapy is a cancer treatment that slows or stops the growth of cancer that needs hormones to grow, such as breast cancer etc.

Side effects

- Feeling tired all the time
- Hair loss
- Problems with digestive system
- Constipation or diarrhea
- Difficulty with taste buds
- Sudden weight gain or weight loss

Radiation Therapy

Type of cancer treatment that uses beams of intense energy to kill cancer cells

Side effects

Radiation in Head/Neck Area

- Dry mouth.
- Mouth and gums sore
- Difficulty swallowing
- Tooth decay
- Hair loss
- Stiffness in jaw

Radiation in Chest

- Permanent lung scars
- Shortness of breath
- Pneumonitis
- Breast & nipple soreness
- Shoulder stiffness

Immunotherapy

Immunotherapy consists of checkpoint inhibitors which work by disrupting the cancer cells' signals, exposing them to the immune system for attack. Checkpoint inhibitors block those signals and expose the cancer cells for attack

Side Effects

- Fatigue, shortness of breath
- Diarrhea, Fever, Headache
- Rash and/or blisters, Itching
- Nausea, Vomiting
- Weight loss, decreased appetite
- Difficulty falling or staying asleep

Targeted Therapy

Targeted therapy involves administration of drugs which block the growth and spread of cancer by preventing cancer cells from growing and dividing. They help other therapies, such as chemotherapy, work better. They cause less harm to healthy cells, which may lead to fewer side effects

Side Effects

- Diarrhea and liver problems, such as hepatitis and elevated liver enzymes
- Skin problems (acneiform rash, dry skin, nail changes, hair depigmentation)
- Problems with blood clotting and wound healing
- High blood pressure
- Gastrointestinal perforation (a rare side effect of some targeted therapies)

Chemotherapy

Chemotherapy destroys cancer cells by preventing them from dividing. But it can also damage healthy cells

Side effects

- Fatigue or infection
- Can damage cells in the mouth, throat and stomach. Mouth sores and diarrhea
- Can damage hair roots and cause hair loss
- Vomiting and nausea

Coping with Chemotherapy

- Wear loose clothing
- Eat slowly to help with digestion
- Take enough naps and rest for fatigue
- Use ice chips, special mouthwash for mouth sores. Eat lightly cooked instead of raw vegetables
- Hair loss is temporary. You may wear a head cover (scarf, wig)

Reconstructive Surgery

Cancer treatments sometimes damage a body part's function or appearance. Reconstructive surgery helps repair that damage or replace the part that had cancer

Examples

- Breast implants after removal of the breast in case of breast cancer
- Replacing tissue or nerves removed during treatment for head and neck cancer or skin cancer

Side Effects

- Pain and discomfort: Feeling groggy, bleeding, infection
- Effect on everyday life: Tiredness from the surgery, may take a long time to recover and heal
- Problems with the reconstruction: For example, the implant may leak
- Worry about how the body looks and feels

Ways to Overcome Side Effects of Cancer Treatment

- Be aware of taste changes, try new foods
- Write to-do lists to overcome forgetfulness
- Avoid multitasking. Do one thing at a time and stay focused
- Do brain exercises like Sudoku
- Develop hobbies
- Eat healthy foods like fish, leafy vegetables, whole grains.
- Be very organized.
- Get help from family and friends

Clinical Trials

Clinical trials are where scientists try to study if a new cancer medicine will or will not make the patient feel better and stop the cancer from spreading to the rest of the body.

Why should an individual who has cancer take part in a clinical trial?

- To receive a new medicine that may help them get better. But, there is a risk that they may not receive the new treatment or that the new treatment may not work
- Scientists can learn more about cancer, and help more patients who have cancer

Who can be part of a clinical trial?

- Someone with a certain kind or level of cancer or who may have received other kinds of cancer medicines
- Someone with a certain kind of gene
- Age and health of the person

References

1. <https://www.cancerresearchuk.org/about-cancer/what-is-cancer>
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3. <https://www.who.int/news-room/fact-sheets/detail/cancer>
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5. <https://www.cancercare.org/publications>
6. Cancer.net
7. Cancer.org