



University of Basrah
College of Nursing
Fundamentals of Nursing Department
Adult Nursing(1) 2nd Stage



Lecture 2 (Theory)

Care of Patients with Cancer

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Glossary

- ▶ **Oncology:** field or study of cancer.
- ▶ **Cancer:** a disease process whereby cells proliferate abnormally, ignoring growth-regulating signals in the environment surrounding the cells.
- ▶ **Carcinogenesis:** process of transforming normal cells into malignant cells.
- ▶ **Biopsy:** a diagnostic procedure to remove a small sample of tissue to be examined microscopically to detect malignant cells.

- ▶ **Metastasis:** spread of cancer cells from the primary tumor to distant sites.
- ▶ **Hyperplasia:** increase in the number of cells of a tissue; most often associated with periods of rapid body growth.
- ▶ **Metaplasia:** conversion of one type of mature cell into another type of cell.
- ▶ **Alopecia:** hair loss.

- ▶ **Malignant:** having cells or processes that are characteristic of cancer.
- ▶ **Palliation:** relief of symptoms associated with cancer.
- ▶ **Chemotherapy:** use of medications to kill tumor cells by interfering with cellular functions and reproduction.
- ▶ **Radiotherapy:** use of ionizing radiation to interrupt the growth of malignant cells.
- ▶ **Apoptosis:** programmed cell death
- ▶ **Neoplasia:** uncontrolled cell growth that follows no physiologic demand

Comparison between Benign and Malignant Tumors:-

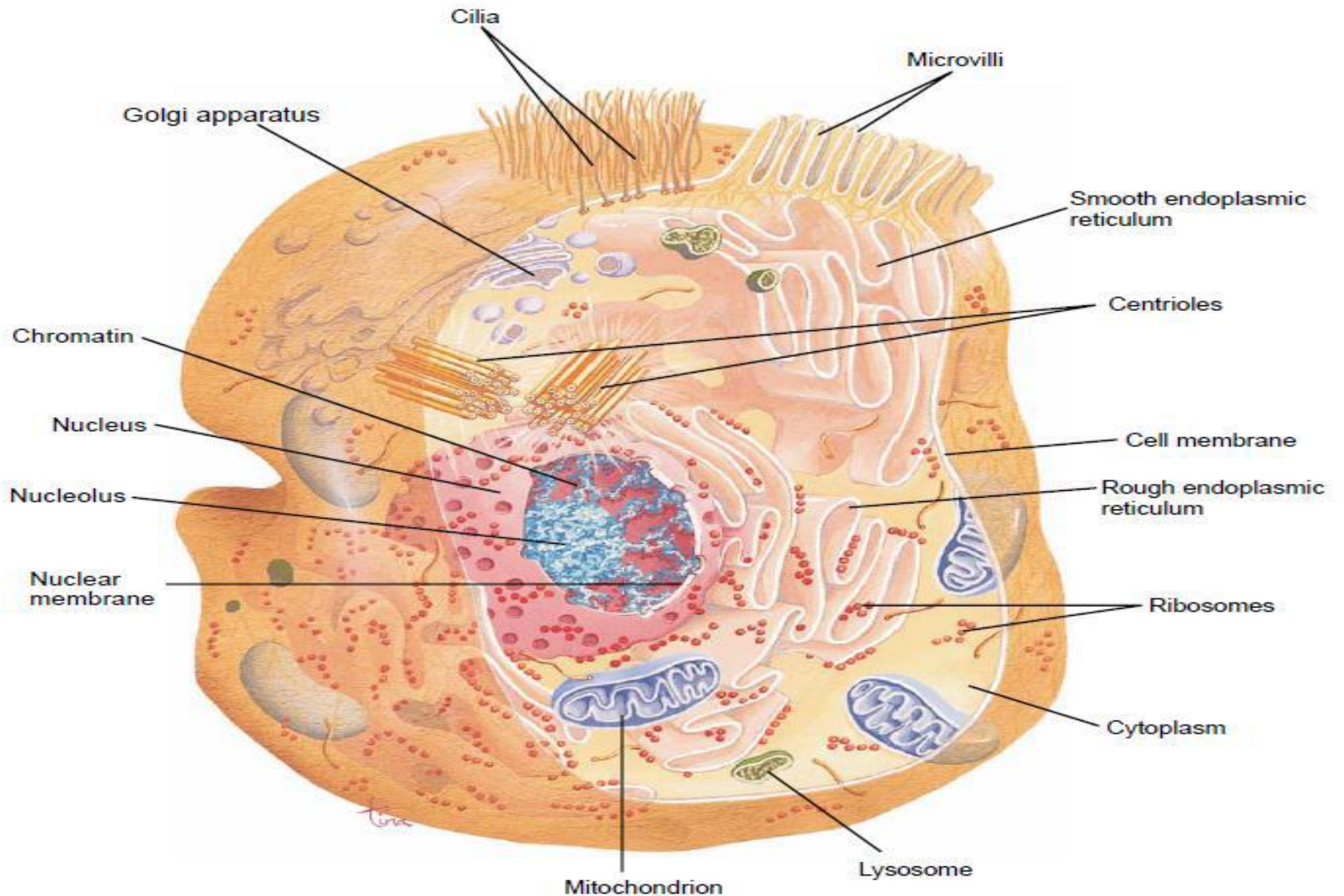
	Benign	Malignant
<i>Growth Rate</i>	Typically slow expansion	Often rapid with cell numbers doubling normal cell growth; malignant cells infiltrate surrounding tissue
<i>Cell Features</i>	Typical of the tissue of origin	Atypical in varying degrees of the tissue or origin; altered cell membrane; contains tumor-specific antigens
<i>Tissue Damage</i>	Minor	Often causes necrosis and ulceration of tissue
<i>Metastasis</i>	Not seen; remains localized at origin site	Often spreads to form tumors in other parts of the body
<i>Recurrence after Treatment</i>	Seldom recurrence after surgical removal	Recurrence can be seen after surgical removal and following radiation and chemotherapy
<i>Related Terminology</i>	Hyperplasia, polyp, and benign neoplasia	Cancer, malignancy, and malignant neoplasia
<i>Prognosis</i>	Not injurious unless location causes pressure or obstruction to vital organs	Death if uncontrolled

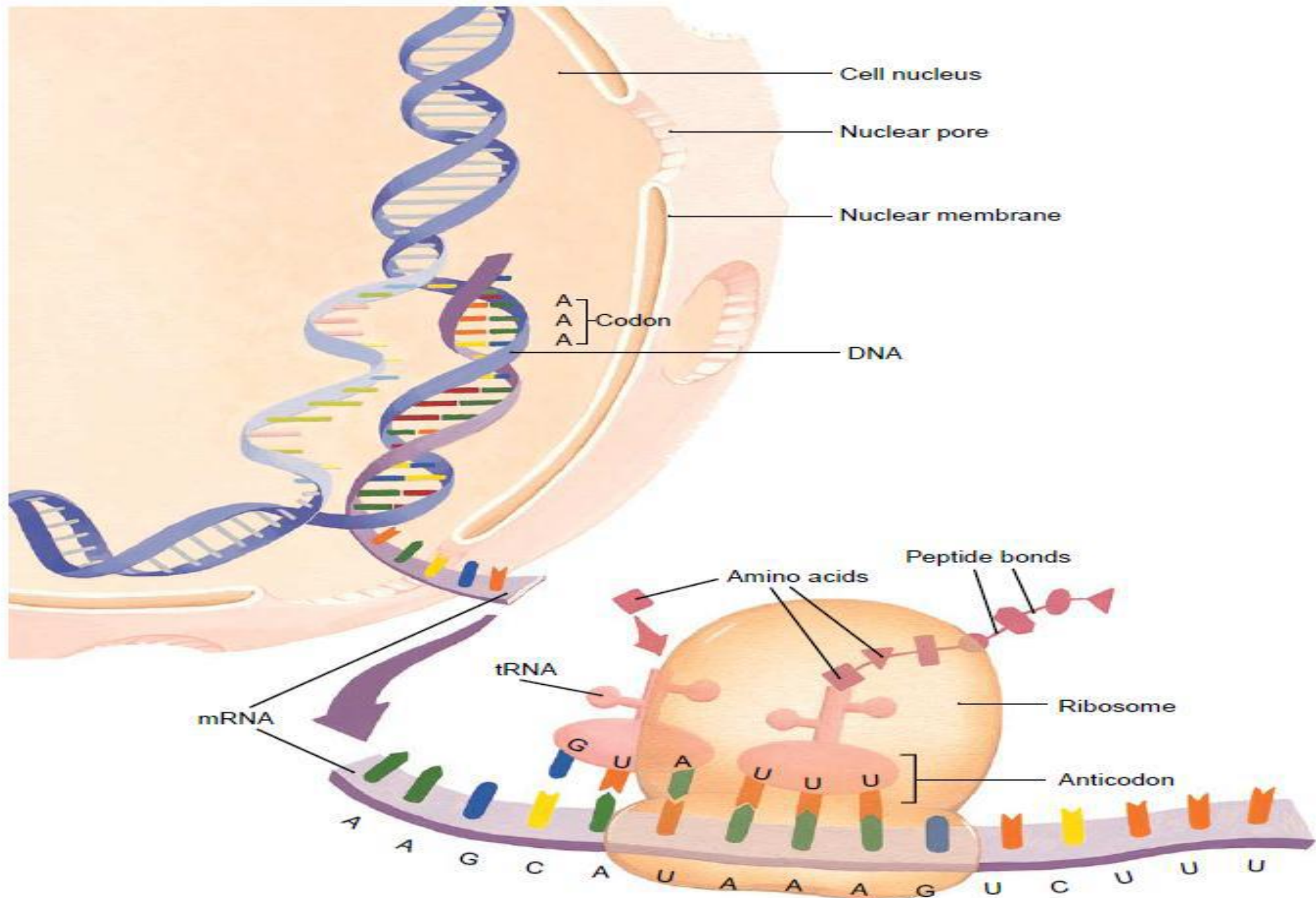
Types of Tumors:-

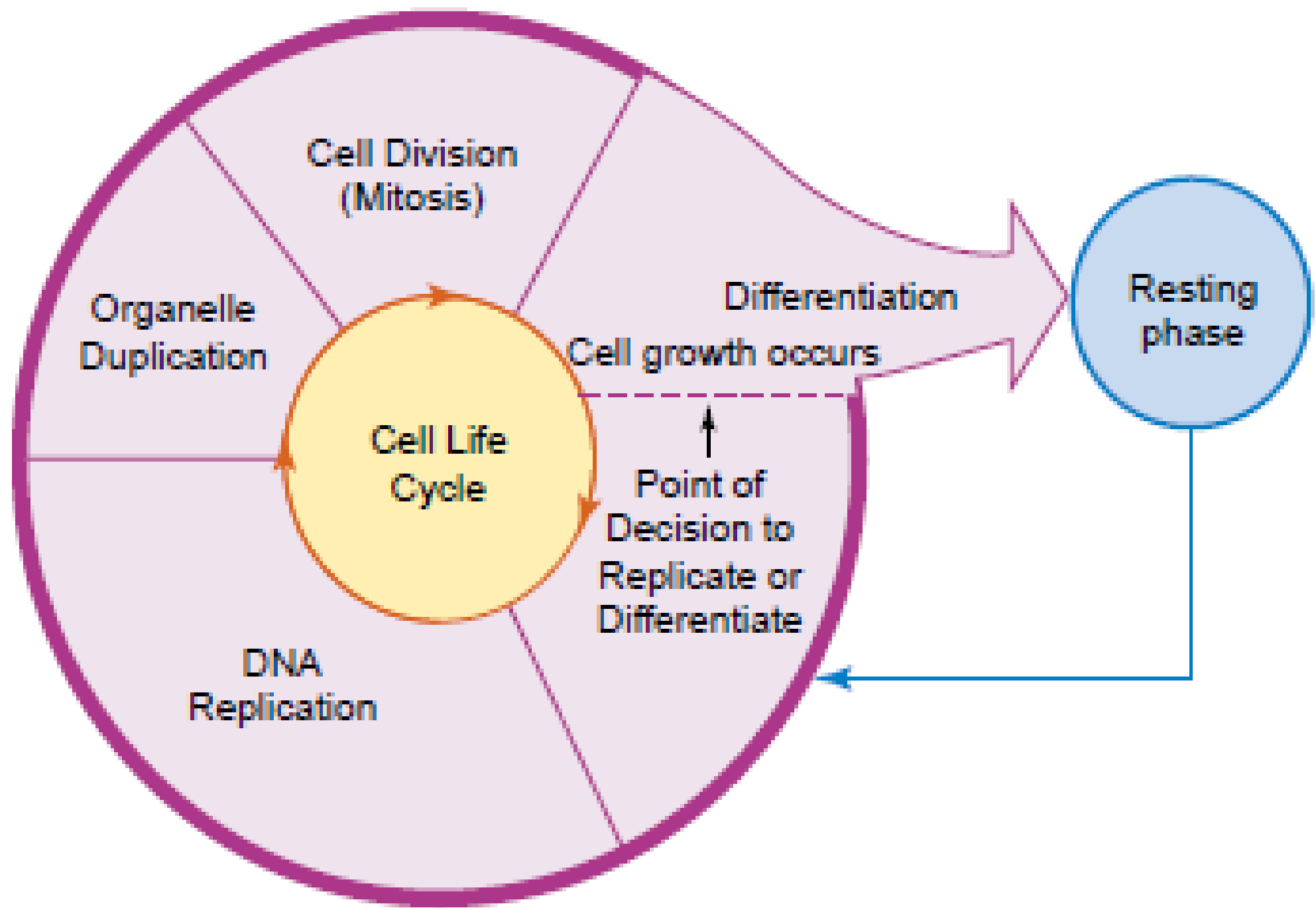
Tumor Type	Character	Origin
Fibroma	Benign	Connective tissue
Lipoma	Benign	Fat tissue
Carcinoma	Cancerous	Tissue of the skin, glands, and digestive, urinary, and respiratory tract linings
Sarcoma	Cancerous	Connective tissue, including bone and muscle
Leukemia	Cancerous	Blood, plasma cells, and bone marrow
Lymphoma	Cancerous	Lymph tissue
Melanoma	Cancerous	Skin cells

Pathophysiology of the Malignant Process

- ▶ Cancer is a disease process that begins when an abnormal cell is transformed by the genetic mutation of the cellular DNA. This abnormal cell forms a clone and begins to proliferate abnormally, ignoring growth-regulating signals in the environment surrounding the cell. The cells acquire invasive characteristics, and changes occur in surrounding tissues. The cells infiltrate these tissues and gain access to lymph and blood vessels, which carry the cells to other areas of the body. This phenomenon is called **metastasis** (cancer spread to other parts of the body).

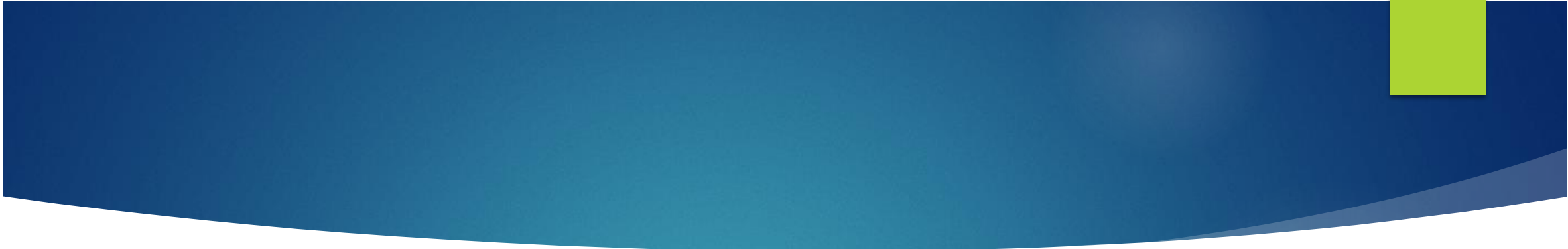








Lung cancer

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- ▶ **Cancer** is a group of cells that grows out of control, taking over the function of the affected organ. Cancer cells are described as poorly constructed, loosely formed, and without organization.
 - ▶ A simplistic definition is “confused cell.”

Etiology

- ▶ Viruses and Bacteria
- ▶ Physical Agents
- ▶ Chemical Agents
- ▶ Genetic and Familial Factors
- ▶ Dietary Factors
- ▶ Hormonal Agents

CAUTION

- Change in bowel or bladder habits
- Asore that fails to heal
- Unusual bleeding or discharge
- Thickening or lump in breast or other tissue
- Indigestion or swallowing difficulties
- Obvious change in wart or mole
- Nagging cough or hoarseness

Warning signs of cancer



▶ **Staging and grading of cancer**

▶ **TNM**

Staging.....

Classification	Staging	Tissue Involvement
Primary tumor (T)		
T ₀	Stage I	Tumor in situ, indicates no invasion of other tissues
T ₁ , T ₂ , T ₃ , T ₄	Stage II	Ranges indicate progressive increase in tumor size with local metastasis
Regional lymph node involvement (N)		
N ₀	No nodes	
N ₁ , N ₂ , N ₃	Stage III	Metastasis to regional lymph nodes
Metastasis (M)		
M ₀		No metastasis
M ₁	Stage IV	Distant metastasis

Treatment goals may include:

- ▶ Complete eradication of malignant disease (**cure**)
- ▶ Prolonged survival and containment of cancer cell growth (**control**)
- ▶ Relief of symptoms associated with the disease (**palliation**).

Surgery

- ▶ Surgical removal of the entire cancer remains the ideal and most frequently used treatment method.
- ▶ Surgery may be the primary method of treatment, or it may be prophylactic, palliative, or reconstructive.

Diagnostic Surgery (biopsy)

- ▶ Excisional biopsy is most frequently used for easily accessible tumors of the skin, breast, upper and lower gastrointestinal tract, and upper respiratory tract.
- ▶ Incisional biopsy is performed if the tumor mass is too large to be removed. In this case, a wedge of tissue from the tumor is removed for analysis.

Surgery as Primary Treatment

- ▶ Remove the entire tumor or as much as is feasible and any involved surrounding tissue, including regional lymph nodes.
- ❖ **Two common surgical approaches used for treating primary tumors:**
 - **Local excision:** it includes removal of the mass and a small margin of normal tissue that is easily accessible.
 - **Wide excision:** it includes removal of the primary tumor, lymph nodes and surrounding tissues that may be at high risk for tumor spread.

Prophylactic Surgery

- ▶ Prophylactic surgery involves removing nonvital tissues or organs that are likely to develop cancer.

e.g. Mastectomy and oophorectomy.

The following factors are considered when electing prophylactic surgery:

- Family history and genetic predisposition
- Presence or absence of symptoms
- Potential risks and benefits
- Ability to detect cancer at an early stage
- Patient's acceptance of the postoperative outcome

Palliative Surgery

- ▶ Palliative surgery is performed in an attempt to relieve complications of cancer, such as ulcerations, obstructions, hemorrhage and pain.

Reconstructive Surgery

- ▶ Reconstructive surgery may follow curative and is carried out in an attempt to improve function or obtain a more desirable cosmetic effect.

Nursing Management in Cancer Surgery

- ▶ Perioperative nursing care
- ▶ Preoperative assessment
- ▶ Post operative nursing care
- ▶ Patient and family education

RADIATION THERAPY

- ▶ Ionizing radiation is used to interrupt cellular growth.
- ▶ Radiation may be used to cure the cancer as in:
 - Thyroid carcinomas, localized cancers of the head and neck, and cancers of the uterine cervix.

Nursing Management in Radiation Therapy

- ❖ The nurse assesses:
 - The patient's skin and oropharyngeal mucosa regularly when radiation therapy is directed to these areas.
 - Nutritional status and general feelings of well-being throughout the course of treatment.
- ❖ If systemic symptoms such as weakness and fatigue occur, the nurse explains that these symptoms are a result of treatment and do not represent deterioration or progression of the disease.
- ❖ Gentle oral hygiene is essential to prevent irritation, and promote healing.

Chemotherapy

- ▶ Antineoplastic agents are used in an attempt to destroy tumor cells by interfering with cellular functions and reproduction.
- ▶ Chemotherapy may be combined with surgery, radiation, or both to reduce tumor size, to destroy any remaining tumor cells, or to treat some forms of leukemia or lymphoma.

Nursing Management in Chemotherapy

▶ Assessing fluid and electrolyte status

- Assess the patient's nutritional and fluid and electrolyte status frequently.
- Use creative ways to encourage an adequate fluid and dietary intake.

▶ Modifying risks for infection and bleeding

- Aseptic technique and gentle handling are indicated to prevent infection and trauma.
- Laboratory test results, particularly blood cell counts, are monitored closely.

BONE MARROW TRANSPLANTATION

- ❖ **Types of BMT based on the source of donor cells include:**
 - ▶ Allogeneic (from a donor other than the patient): either a related donor (ie, family member) or a matched unrelated donor (national bone marrow registry)
 - ▶ Autologous (from patient)
 - ▶ Syngeneic (from an identical twin)

Nursing Management in Bone Marrow Transplantation

- ▶ Implementing pre-transplantation care
- ▶ Providing care during treatment
- ▶ Providing post-transplantation care
- ▶ Caring for the donors

Other types of treatment

- ▶ Hyperthermia
- ▶ Biologic response modifiers
- ▶ Photodynamic therapy
- ▶ Gene therapy



❖ COLLABORATIVE PROBLEMS/ POTENTIAL COMPLICATIONS

Based on the assessment data, potential complications that may develop include the following:

- ❖ Infection and sepsis
- ❖ Hemorrhage
- ❖ Superior vena cava syndrome
- ❖ Spinal cord compression
- ❖ Hypercalcemia
- ❖ Pericardial effusion
- ❖ Disseminated intravascular coagulation
- ❖ Syndrome of inappropriate secretion of antidiuretic hormone
- ❖ Tumor lysis syndrome

NURSING PROCESS:

❖ NURSING ASSESSMENT

- Infection
- Bleeding
- Skin problems
- Hair loss
- Nutritional concerns
- Pain
- Fatigue
- Psychosocial status
- Body image

NURSING DIAGNOSIS

- Impaired skin integrity related to radiation therapy
- Impaired oral mucous membrane related to radiation therapy
- Impaired tissue integrity: alopecia
- Imbalanced nutrition, less than body requirements, related to nausea and vomiting
- Disturbed body image and situational low self-esteem related to changes in appearance, function, and roles
- Risk for infection related to altered immunologic response

Nursing Interventions



- Managing stomatitis
- Maintaining tissue integrity
- Assisting patients to cope with alopecia
- Managing malignant skin lesions
- Promoting nutrition
- Relieving pain
- Decreasing fatigue
- Improving body image and self-esteem
- Assisting in the grieving process

Summary

1. Cancer is a disease process that begins when an abnormal cell is transformed by the genetic mutation of the cellular DNA.
2. Tumor cells may be benign or malignant, this is differentiated by multiple features such as rate of growth, radiation. Etc...
3. CAUSION means abbreviation to the warning signs of cancer
4. Staging of cancer are four(Stage I, II, III, IV).
5. Chemotherapy medications used to kill tumor cells, but Radiotherapy use of ionizing radiation to interrupt the growth of malignant cells.

Lecture Questions

1. Which of the following is a characteristic of benign tumors?

- A. Invasive growth B. Immature, poorly differentiated tissue C. Presence of metastasis D. Fully differentiated tissue

2- A patient who has underwent a bone marrow transplant is at most risk for what?

- A. HIV B. Congestive heart failure C. Bleeding and infection D. Liver failure

3. Cancer of epithelial cells is known as:

- A. Sarcoma B. Myeloma C. Carcinoma D. Leukemia

4. Ondansetron, 8 mg IV given before chemotherapy is to prevent:

- A. Alopecia B. Fatigue C. Vomiting D. Pain

5. Which is not cancer

- A. Glaucoma B. Leukemia C. Carcinoma D. Sarcoma

6. The severe weight loss accompanied by progressive weakness, loss of appetite and anemia that is usually associated with advanced cancer is called ?

- A. Cachexia B. Anaplasia C. Dysplasia D. Carcinomatosis

Reference

- Textbook of medical-surgical nursing Description: 14th edition. | Philadelphia : Wolters Kluwer, [2018], ISBN 9781496355157 (2-volume American edition)



THANKS