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Nursing Management of Patients with Oncological Disorders

Adult Health Nursing

Principles of oncology, carcinogenesis, staging and grading of cancer, chemotherapy, radiotherapy, immunotherapy, cancer emergencies, symptom management and palliative care.

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CHAPTER 17 / ADULT HEALTH NURSING 17. Nursing Management of Patients with Oncological Disorders

1. Cancer biology

Cancer is uncontrolled proliferation of abnormal cells with potential invasion and metastasis. Carcinogenesis involves accumulated genetic/epigenetic changes affecting cell cycle, repair and apoptosis. Risk factors include tobacco, alcohol, UV/ionizing radiation, selected infections, hereditary susceptibility and age. Benign tumours do not invade/metastasize but can still cause harm.

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2. Classification, diagnosis and staging

Carcinoma arises from epithelium, sarcoma from mesenchymal tissue, leukaemia from blood-forming tissues, lymphoma from lymphoid cells and myeloma from plasma cells. Diagnosis typically requires tissue/cell assessment; imaging, molecular testing and tumour markers guide selected decisions. Grade describes microscopic differentiation/aggressiveness; stage describes extent/spread. TNM = primary tumour, nodes, metastasis; not used for every cancer.

3. Treatment modalities

Modality	Action and nursing considerations
Surgery	Local removal; assess wound, pain, bleeding, drains, function and rehabilitation.
Chemotherapy	Cytotoxic systemic therapy; monitor counts, mucositis, nausea, infection and extravasation.
Radiotherapy	Local/regional ionizing radiation; skin care, fatigue and site-specific effects. External beam does not make patient radioactive.
Targeted therapy	Acts on molecular targets; monitor agent-specific toxicity (e.g., cardiac, skin, BP).
Immunotherapy	Enhances immune attack; immune-related adverse effects may involve any organ and need early assessment.
Hormonal therapy	Reduces hormone-dependent growth; monitor agent-specific effects, bone health and adherence.

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4. Oncological emergencies

Febrile neutropenia

Definition and pathophysiology: Infection during reduced neutrophil count, potentially rapidly progressive.

Clinical features and investigations: Fever may be only sign; assess ANC, perfusion, cultures per protocol.

Management and nursing care: Immediate oncology/sepsis escalation, prompt prescribed empiric antimicrobials; avoid rectal procedures in severe neutropenia.

Tumour lysis syndrome

Definition and pathophysiology: Rapid cell breakdown releases potassium, phosphate and uric acid; calcium may fall.

Clinical features and investigations: Arrhythmia, AKI, seizure; serial electrolytes/uric acid/creatinine.

Management and nursing care: Risk-based prevention and prescribed hydration/urate-lowering treatment; ECG, fluid and lab monitoring.

Spinal cord compression, SVC syndrome and hypercalcaemia

Definition and pathophysiology: Tumour growth compresses spinal cord or superior vena cava; malignancy may raise calcium.

Clinical features and investigations: New back pain/weakness/bladder dysfunction; facial swelling/breathlessness; confusion, thirst, constipation respectively.

Management and nursing care: Urgent oncology assessment, appropriate imaging and specialist treatment; protect mobility/airway, monitor neurological and biochemical changes.

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5. Nursing care during therapy

Verify protocol, consent and identity, drug checks and vascular access. Cytotoxic medicines require trained staff, hazardous drug PPE and spill procedures. For suspected vesicant extravasation stop infusion, leave cannula in place for aspiration/antidote per agent protocol, do not flush, notify team. Assess nutrition, oral care, fatigue, fertility concerns, body image and psychosocial distress. Discuss palliative care early alongside disease-directed treatment.

6. Important Examination Questions

Long Answer Questions

1. 1. Discuss cancer staging, treatment modalities and nursing care during chemotherapy.

Short Answer Questions

1. 1. Differentiate stage and grade
2. 2. explain tumour lysis, febrile neutropenia and extravasation.

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Very Short Answer Questions (with answers)

1. 1. What does TNM mean? - Tumour, nodes, metastasis.
2. 2. Is external beam radiotherapy itself a source of patient radioactivity? - No.

7. Quick Revision

- Fever during neutropenia needs urgent treatment.
- Treatment depends on cancer biology and stage.
- Palliative care can coexist with active treatment.

8. Conclusion

Fever during neutropenia needs urgent treatment. Treatment depends on cancer biology and stage. Palliative care can coexist with active treatment.

Practice questions

Choose one best answer. The answer key and explanations follow the questions.

1. How does cancer stage differ from grade?

A. Stage describes extent or spread; grade describes microscopic differentiation or aggressiveness
B. Stage describes differentiation; grade describes spread
C. Both describe only the primary tumour diameter
D. Both describe only treatment adverse effects

2. Which biochemical change is expected in tumour lysis syndrome?

A. A fall in potassium with no change in uric acid
B. Release of potassium, phosphate and uric acid
C. Isolated sodium loss without cell breakdown
D. A rise in calcium as the defining change

3. What is an appropriate immediate action for suspected vesicant extravasation?

A. Flush the cannula forcefully
B. Continue the infusion through the same site
C. Stop the infusion and leave the cannula for protocol-directed aspiration or antidote
D. Remove the cannula before assessing the agent protocol

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Answer key and explanations

1. A - Stage describes extent or spread; grade describes microscopic differentiation or aggressiveness

Stage concerns extent and spread; grade concerns microscopic differentiation and aggressiveness.

2. B - Release of potassium, phosphate and uric acid

Rapid tumour cell breakdown releases potassium, phosphate and uric acid; calcium may fall.

3. C - Stop the infusion and leave the cannula for protocol-directed aspiration or antidote

Stop the infusion, retain access for aspiration or antidote as directed, avoid flushing and notify the team.

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