Medical Oncology Training Course – Breast Cancer Management

Course Syllabus

1. **Course Description**

Medical oncology course provides of continuing medical education for oncology professionals, offering a structured educational pathway to enhance their oncology careers. It is a detailed program in breast cancer screening, detection, diagnosis, treatment and follow up.

Designed for medical oncologists seeking specialization in breast cancer management with access to high-volume data regarding the most updated information.

2. Course Objectives

By the end of this program, participants will be able to:

- **Understand** breast cancer screening (modalities, timing and schedule)
- **Select** the ideal modality for breast cancer diagnosis (radiological and interventional and pathologically)
- **Perform** adequate molecular classification of the breast cancer based on all data previously collected
- **Correlate** between molecular classification of the breast cancer and select the type of the treatment (chemotherapy, hormonal treatment, targeted therapy and surgery)
- **Modify** the treatment based on tumor response, treatment side effects and patient tolerance
- **Manage** treatment side effects (short term and long term)
- **Tailor** a program of follow up (clinical examination, time of radiological assessment)
- **Emerging** Challenges in breast cancer management

3. Intended Learning Outcomes (ILOs)

A. Knowledge (Cognitive Domain)

Upon completion of the course, participants will be able to:

1. **Explain and critically appraise** breast cancer screening guidelines, diagnostic pathways, staging systems, and prognostic frameworks.

2. **Describe and compare** the biological, pathological, and molecular characteristics of breast cancer subtypes, including rare and aggressive variants.
3. **Interpret epidemiological data and risk factors** influencing breast cancer incidence, prognosis, and outcomes.
4. **Explain the clinical relevance of biomarkers and genomic alterations** (e.g., ER/PR, HER2, PIK3CA, AKT, ESR mutations, BRCA and related genes).
5. **Summarize mechanisms of endocrine resistance, immune evasion, and targeted therapy resistance** in breast cancer.
6. **Explain current evidence supporting systemic therapies**, including endocrine therapy, chemotherapy, immunotherapy, targeted agents, oral therapies, and antibody–drug conjugates.
7. **Describe principles of escalation, de-escalation, and treatment sequencing** across early and metastatic breast cancer.
8. **Outline supportive care principles**, including cardio-oncology, thromboembolic disease, symptom management, and palliative care.

B. Skills (Psychomotor / Clinical Reasoning Domain)

Upon completion of the course, participants will be able to:

1. **Analyze and integrate clinical, imaging, pathological, and molecular data** to accurately stage and subtype breast cancer.
2. **Design individualized treatment plans** for early-stage, locally advanced, and metastatic breast cancer across all biological subtypes.
3. **Select and sequence systemic therapies** based on patient characteristics, tumor biology, prior treatments, and toxicity profiles.
4. **Apply precision medicine tools and molecular assays** to inform adjuvant and metastatic treatment decisions.
5. **Anticipate, monitor, and manage treatment-related toxicities**, including those related to endocrine therapy, targeted agents, ADCs, immunotherapy, and chemotherapy.
6. **Implement multidisciplinary management strategies** for complex clinical scenarios such as CNS metastases, axillary disease, oligometastatic cancer, and inflammatory breast cancer.
7. **Develop survivorship and follow-up care plans** addressing recurrence risk, long-term toxicities, fertility, and quality of life.
8. **Utilize evidence-based supportive and palliative care interventions** to improve symptom control and functional outcomes.

C. Attitudes (Professional Values & Behaviors)

Upon completion of the course, participants will be able to:

1. **Demonstrate patient-centered and ethical decision-making**, incorporating patient values, preferences, and shared decision-making principles.
2. **Adopt a multidisciplinary and collaborative approach** to breast cancer care involving oncology, surgery, radiology, pathology, genetics, fertility, and supportive care teams.
3. **Commit to continuous professional development** through critical appraisal of emerging evidence and evolving standards of care.
4. **Recognize the importance of quality of life, survivorship, and palliative care** as integral components of comprehensive cancer management.
5. **Exhibit cultural sensitivity and professionalism** in addressing fertility, genetic risk, gender-specific issues, and end-of-life care.
6. **Advocate for safe, equitable, and high-quality cancer care**, including appropriate use of resources and toxicity mitigation.

4. Target Audience

- Medical/Clinical Oncology residents
- Medical Oncologists/ Clinical Oncologists (post-M.B.B.Ch.)
- Fellows in Medical/ Clinical oncology

5. Course Duration & Structure

40 hours

Basic Training

Component	Number	Hours	Format
Modules	8	30	Online/offline
Physical	5	10	Hands on /case discussion

6. Course Outline

Module 1: Screening and Diagnosis

1. Breast cancer screening guidelines and recommendations
2. Breast cancer statistics and Risk factors
3. Breast cancer imaging (diagnosis and hunting special subtypes)
4. Biopsy techniques and histopathological evaluation
5. Breast cancer subtypes and their characteristics (also rare subtypes)

Module 2: Staging and Prognostic Factors

1. TNM staging system and prognostic factors: (tumor size, grade, receptor status, and lymph node involvement)
2. Biomarkers and their role in breast cancer management (details of new biomarkers PIK3CA, AKT, ESR mutations, BRCA and other markers)
3. Carcinoma in situ management and prognosis.

Module 3: Understanding Hormone Receptor Positive / HER2 Negative Breast Cancer

1. Management of HR +ve/ Her2 –ve non metastatic breast cancer
2. Preoperative Endocrine Therapy
3. Adjuvant Endocrine Therapy: long journey with many details

4. Systemic Treatment Escalation in High Risk Patients (HR Positive/ HER2 Negative)
5. Management of metastatic HR +ve/ Her2 –ve breast cancer (treatment sequence and patient selection)
6. Mechanisms of endocrine therapy resistance in luminal type advanced breast cancer
7. Endocrine Therapy in Breast Cancer: Adherence to Treatment and Managing Toxicity

Module 4: HER2 Positive Breast Cancer: Targeted Therapies and Treatment Advances

1. Non Metastatic HER2 Positive Breast Cancer: Current Treatment Options
2. HER2 Positive Breast Cancer: Treatment Escalation and De-Escalation
3. Management of Her2 +ve metastatic patients

Module 5: Navigating Triple Negative Breast Cancer: Hope and progress

1. Management of TNBC early stage
2. Adjuvant Treatment in TNBC
3. Management of TNBC metastatic patients Challenges and success
4. Immunotherapy in Breast Cancer: Current Evidence and Future Directions

Module 6 Emerging Challenges (Navigating The Future of Care)

1. Management of CNS Disease in Breast Cancer
2. Management of axilla (long journey to improve the quality of life)
3. Utilizing Molecular Assays for Early Stage Breast Cancer (Precision medicine)
4. ADCs (Antibody-Drug Conjugates) in Breast Cancer: T-DXd and Beyond
5. BRCA mutated breast cancer: overcoming emerging challenges
6. Optimizing ADC Therapy in Breast Cancer: Mitigating Toxicity
7. Oral Targeted Therapy in Breast Cancer: toxicity profile How to Treat?

Module 7: Special Situations

1. Male breast cancer
2. Advancement in Management of Inflammatory Breast Cancer (IBC)
3. Oligometastatic breast cancer
4. Fertility preservation, pregnancy also what about genetic mutation carriers
5. Follow up schedule in breast cancer survivors

Module 8: Supportive Care

1. Cardio-oncology and breast cancer
2. Management of nausea and vomiting
3. Cancer-Associated Venous Thromboembolic Disease
4. Hematopoietic Growth Factors
5. Palliative care: (Anorexia/Cachexia, Constipation, Diarrhea, Dyspnea, Malignant Wounds, Nausea and Vomiting, Pain)

8. Evaluation Methods

Assessment Tool	Weight	Purpose
MCQs after each module	30%	Test theoretical knowledge
Live case-based discussions	25%	Assess clinical reasoning and multidisciplinary collaboration
Skills case scenario	20%	Apply knowledge in practice (virtual or in-person)
Final comprehensive MCQ/EMQ	25%	Evaluate integrated decision-making

10.Certification Requirements

- **Attendance:** Minimum of 85% attendance for live sessions (online or physical).
- **Final Exam Score:** Minimum of 75% on the final exam.
- **Participation:** Active participation in at least 2 live case-based discussions.
- **Completion of All Modules:** All 8 modules must be completed, with post-module quizzes passed (≥70%)