

European Specialization in Oncology Pharmacy (EUSOP)

100 hours Master Class Education Program Through the Academy of the European Society of Oncology Pharmacy (ESOP)

Education Content

1. Basics of Oncology Pharmacy (18 Hours)

Learning Targets

- Understand national and international quality standards of oncology pharmacy
- Understand classification and mechanism of action of antineoplastic drugs
- To be able to understand and apply aseptic technique and clean working principles
- To be able to understand and apply personal protective equipments and preparation of antineoplastic drugs
- To be aware of technical, microbiological and environmental monitoring, to be able to install and implement these systems in their own works
- Understand the importance of working with cytotoxic drugs and monitoring methods in occupational health

Note on implementation

For all topics suitable sources of literature and information should be presented. This section is performed 9.5 hours international webinars, 2 hours national trainings and 6.5 hour international workshops.

A. Quality Standards of Oncology Pharmacy (3h)

- i. Quality Standards of Oncology Pharmacy (Quapos) ESOP
- ii. Quality Management Systems Around the Globe
- iii. Pharmacist's Involvement from Prescription to Administration

B. The Classification and Mechanism of Action of Antineoplastic Drugs (2h)

- i. The Classification and Mechanism of Action of Antineoplastic Drugs

C. Pharmacist's Involvement from Prescription to Administration (6h)

- i. Aseptic Technique
- ii. Clean Working
- iii. Personal Protective Equipments (PPE)
- iv. Spill-Kit

- v. Waste Disposal
- vi. Prescription
- vii. Methods of Dose Calculation

D. Pharmacy Anticancer Drug Unit (3h)

- i. Devices
- ii. Automation
- iii. Facilities
- iv. Room Design
- v. Furniture
- vi. HVAC

E. Monitoring & Validation (2h)

- i. Technical Monitoring and Validation
- ii. Microbiological Monitoring and Validation

F. Working with Cytotoxic Drugs (1.5h)

- i. The Risk of Working with Cytotoxic Drugs
- ii. Monitoring Methods in Occupational Health

G. Emergency Pharmacy in Oncology Treatment (0.5h)

Note on implementation

International webinars provide interactive communication between instructors and participants. Participants can ask questions directly to the trainers. Instructors use instant surveys, photos and videos to transfer information effectively. National training programs are conducted in the native languages of the countries. For this reason, education in this context should be translated into local languages beforehand. International educations are a face-to-face trainings. These trainings are conducted with case discussions, applied workshops. The goal is to interactively perform all of the participants in a discussing environment. For this reason, all necessary materials must be prepared in advance and an information should be provided containing guidelines for the participants.

2. Oncology Pharmacy in Practice (11 Hours)

Learning Targets

- To be able to apply basic and intermediate oncology pharmacy knowledge in practice
- To understand the role of pharmacists in clinical trials and to be able to take part in these studies

- To learn challenges in oncology pharmacy and to use this knowledge in practice
- To understand basic principles of oncology therapy
- Having information on topics such as medical errors, risk management and pharmacovigilance, and using this information in practice
- To be able to use the information sources and literature effectively
- Having knowledge about the nutrition approach of cancer patients and being able to apply these information effectively in the treatment process

Note on implementation

For all topics suitable sources of literature and information should be presented. This section is performed 6.5 hours international webinars, 3 hours national trainings and 1.5 hour international workshops.

- A. Formulations & Pharmacokinetics of Antineoplastic Drugs (1.5h)
- B. Clinical Trials in Oncology (2h)
- C. The Challenge of Oral Chemotherapy & Compliance, Adherence - Methods of Enhancing (1h)
- D. Physicochemical Stability of Cytotoxics Drugs (1h)
- E. The Basic Principles of Oncology Therapy (1h)
- F. Pharmacovigilance (1h)
- G. Medication Errors / Risk Assessment (1h)
- H. Information Sources and Literature (1h)
- I. Nutritional Support in Cancer Patients (1h)
- J. Pharmaceutical Intervention in Emergency Oncology (0.5h)

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3. Clinical Oncology Pharmacy (46 Hours)

Learning Targets

- To be able to use clinical pharmacy skills in oncology pharmacy
- Understand the place of radiotherapy applications in oncology pharmacy
- To understand the importance of patient communication in oncology pharmacy and to provide patient consultancy service
- To be able to prevent / reduce drug interactions and side effects and to provide an effective service
- To be able to create pharmaceutical care plan and documentation
- To be able to understand supportive treatments/care and use this knowledge in practice
- To learn the common types of cancer in the society, to understand their classification, diagnosis and treatment methods
- To learn pediatric oncology pharmacy skills
- To learn approach to geriatric cancer patients and their diseases and to be able to use this information in practice
- To learn approach to young adults with pregnancy
- Understand the role of the oncology pharmacist in organ dysfunctions

Note on implementation

For all topics suitable sources of literature and information should be presented. Speakers consist of pharmacists and oncologists. This section is performed 25 hours international webinars, 3 hours national trainings and 18 hour international workshops.

A. Cancer Biology, Etiology, Epidemiology (2h)

B. Tumor classification, TNM system, Grading, Staging (1h)

C. Personalized Oncology and Predictive Molecular Diagnostic (1h)

D. Radiotherapy (1h)

E. Radio & Nuclear Pharmacy (1h)

F. Supportive Therapy (3h)

i. Supportive Therapy Management

ii. Supportive Therapy in Clinic

iii. Pharmaceutical Care Plan and Documentation

- G. Interactions of Anticancer Drugs (2h)
- H. Side Effects of Anticancer Drugs (1h)
- I. Complementary Medicine in Oncology (1h)
- J. Patient Communication for Oncology Pharmacists (2h)
 - i. Patient Counseling
- K. Psycho-Oncology (1h)
- L. Clinical Presentation, Diagnosis and Treatment (25h)
 - i. Colon Cancer
 - ii. Breast Cancer
 - iii. Prostate Cancer
 - iv. Melanoma
 - v. ALL
 - vi. Head/Neck Cancers
 - vii. Lung Cancer
- M. Treatment of Pediatric Oncology Patients (2h)
- N. Treatment of Geriatric Oncology Patients (1h)
- O. Cancer Treatment of Young Adults (1h)
 - i. Chemotherapy During Pregnancy
- P. Treatment of Oncology Patients with Organ Dysfunctions (1h)

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4. **Biologics in Oncology Pharmacy (25 Hours)**

Learning Targets

- Understanding the importance and importance of biologics in cancer treatment
- To understand the characteristics of proteins and monoclonal antibodies and the important concepts in protein synthesis.
- To be able to understand the differences between synthetic drugs and biologics and the challenges about them.
- To be able to understand the steps of the development of biological drugs and to use this knowledge in the meaning of the formulation stages of these drugs
- To learn the production and purification processes of biological drugs
- To learn biosimilars, their development and production. Learning new concepts emerging in these processes and the future of biosimilars
- To be able to understand the current practice and regulations about biosimilars
- To learn biologics frequently used in practice
- To be able to use these information to establish an action plan for the management of biosimilars in hospital

Note on implementation

For all topics suitable sources of literature and information should be presented. This section is performed 10 hours international webinars, 4 hours national trainings and 11 hour international workshops.

A. Introduction to Proteins & Monoclonal Antibodies (2h)

- i. Characteristics of proteins
- ii. Protein Synthesis
- iii. Monoclonal Antibodies

B. Introduction to Biological Medicines (3h)

- i. Characteristics and basic concepts of biologics
- ii. Development of Biologics
- iii. Quality of Biologics

C. Introduction to Biosimilars (3h)

- i. What is Biosimilars?
- ii. Biosimilar Development
- iii. Challenges of the Biosimilars (Panel/Group Discussion)

D. Current Practice & Regulations (11h)

- i. Regulatory aspects of biosimilars
 - ii. Substitution/Interchangeability/Switching
 - iii. Patient Education & Counselling
 - iv. Biosimilarity Studies
 - v. Extrapolation between clinical indications
 - vi. Economics of biosimilars
- E. Biosimilars from Development to Clinic (2h)
- i. 1st Gen. G-CSF / Erythropoietin
 - ii. 2nd Gen. Infliximab / Insulin
 - iii. 3rd Gen. Rituximab / Trastuzumab
 - iv. Clinical Guidelines, Central
- F. Concerns Regarding Biosimilars (1h)
- G. Action Plan Adaptation to Your Hospital / QMS (1h)
- H. Practical challenges implementation use of biosimilars (1h)
- I. Take Home Message/Post Evaluation (1h)

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