Eight-Year Experience of the Certificate of Competence and Advanced Studies Program Organized by the European School of Oncology

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Abstract

The Certificate of Competence and Advanced Studies Program is an academically recognized postgraduate program that is organized by the European School of Oncology in collaboration with the University of Ulm and the University of Zurich. It is a part-time educational activity that aims to provide physicians and scientists with advanced knowledge in the management of patients with breast cancer, lymphoma, and lung cancer. The program encloses three attendance seminars and four to five e-learning modules that extend over 12 to 14 months. To be certified, participants have to pass an online test after each module followed by a final certification exam at the end of the program. This article reports on the 8-year experience of the 166 graduated fellows who have attended the program.

Keywords European School of Oncology · Certificate of Competence and Advanced Studies Program · Lymphoma program · Breast cancer program · Lung cancer program

Introduction

The advantages of e-learning and distant teaching quality, time flexibility, and cost logistical issues have raised interest in many online masters organized by various European Faculties [1–3]. The European School of Oncology (ESO) provides online and in-person oncology education to undergraduate and postgraduate participants to answer the growing demand for cancer education in the international

oncology community. It offers a wide range of educational activities that include courses, seminars, masterclasses, e-learning sessions, clinical training centers fellowships, and Certificates of Competence and Advanced Studies Program (CCASP) [4–8].

The CCASPs were developed by ESO to provide a blended educational activity that encloses several seminars and e-learning modules. Three programs were tailored in collaboration with the Universities of Ulm and Zurich to present an updated comprehensive management of breast cancer, lung cancer, and lymphoma. The CCASPs were dedicated to supporting oncologists (medical, clinical, radiation, and hematology), internists, pathologists, and scientists in their research and daily clinical practice. Participants that pass the interim exams undergo a certification exam at the end of the program. In this article, we report on the eight-year experience of the ESO's CCASP as an academically recognized postgraduate program.

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Material and Methods

The Curriculum of the Certificates of Competence and Advanced Studies Program

The certificate programs are postgraduate degrees that require a prerequisite of bachelor's or master's degree. The CCASP commonly begins at the beginning of the winter semester in October of every year and lasts for 12 to 14 months. These programs enclose a combination of four to five e-learning modules and three face-to-face seminars. The teaching curriculum consists of 381, 420, and 405 h of breast cancer, lung cancer, and lymphoma, respectively, and yields 13 to 14 European Credit Transfer and Accumulation System points (ECTS). The extensiveness of the modules is expressed in units; one unit equates to 3 h of workload which consisted of a 30-min lecture and 2.5 h of additional reading. All of the module lectures are pre-recorded video lectures that the participants can attend at their convenience. The platform contains a chat function in case a student has a question for the lecturer. Tables 1 and 2 detail the didactic structure of CCASPs and Supplementary Table 1 provides a curriculum overview (content, seminars, and number of hours) of each CCASP.

The CCASP is a part-time educational activity that covers the theoretical basis and updated management of patients with breast cancer, lymphoma, and lung cancer. The logistics of the three programs were consistently similar throughout the years with an upgrade of the online learning platform. Concerning the content, the ESMO breast cancer congress placed the San Gallen Breast Cancer Conference for the breast cancer program and the International Conference on Malignant Lymphoma replaced the ESO lymphoma course for the lymphoma program.

The breast cancer program included five modules. Module 1 detailed the epidemiology and prevention, biology and clinical trials of breast cancer, module 2 discussed the principles of diagnostics, ductal carcinoma in situ and gene predisposition, module 3 explained the breast unit and locally advanced breast cancer, and modules 4 and 5 elaborated

Table 2 Programs of ESO certificates of competence and advanced studies

	Breast cancer	Lymphoma	Lung cancer
Center	Ulm university	Ulm university	Zurich university
Duration (months)	13	14	12
Total number of hours	381	405	420
ECTS	13	14	14
Number of seminars	3	3	3
E-learning modules	5	4	4

ECTS European Credit Transfer and Accumulation System Points

on the management of early and advanced breast cancer, respectively.

The lung cancer program combined four modules. Module 1 detailed the epidemiology, prevention, biology, and pathology of lung cancer and other thoracic malignancies; module 2 discussed the principles of lung cancer research; module 3 explained the principles of non-small cell lung cancer, diagnosis, and treatment; and module 4 elaborated on the management small-cell lung cancer, mesothelioma, thymoma, and thymic cancer.

The lymphoma program included four modules. Module 1 detailed basic research, epidemiology, and pathology; module 2 discussed the principles of diagnostics, management, and clinical trials; and modules 3 and 4 elaborated on mature B-cell neoplasms and PTLN, T-cell, NK-cell neoplasms, and Hodgkin's lymphoma.

The Exams of the Certificates of Competence and Advanced Studies Program

The examination regulations require that participants answer correctly more than 60% of a written multiple-choice test to pass the module exams. Participants can retake each module test several times until they pass the exam. Only those that

Table 1 Didactic structure for the development of clinical competence

Dimension	Content learning objectives	Methods
Curricular dimension	Knowledge-based Evidence-based medicine State-of-the-art therapy	Lectures Reading Virtual classroom teaching
Processual dimension	Analysis and reflecting clinical treatment Case-based learning Procedural knowledge	Clinical cases Virtual clinical cases E-grand rounds
Performative dimension	Presenting and performing clinical treatment implementing good clinical practice	Clinical case presentations by participants E-grand rounds

pass all the online tests at the end of each module are eligible for the certification exam.

The certification exam can be performed only during the third seminar of each program. Participants that scored correctly more than 60% of the test are certified in the corresponding program. Those who failed the certification exam may undergo the test again during the third seminar or the following program seminar. Participants are categorized according to their scores into 5 subsets: Very Good (90% or more), Good (80%–90%), Satisfactory (70–80%), Sufficient (60–70%), and 5 = Insufficient (< 60%).

The Tuition of the Certificates of Competence and Advanced Studies Program

The tuition fee includes (a) access to seminars, modules, materials, and exams; (b) accommodation, lunches, and coffee breaks during the seminars; and (c) the administrative fee for the enrolment at the Universities. Travel and dinners are not included.

Statistical Analysis

All information and evaluation material deriving from the CCASP during the last 8 years were retrieved from the electronic archives of ESO. The demographic details, results of module tests, and certification exams were collected for analysis. Descriptive statistics were used to describe the participants' demographic characteristics and test results: qualitative data were reported by frequency and proportion and quantitative data by median and range.

Results

To date, 245 applicants have applied for the CCASP of whom 179 candidates were accepted for participation in the respective programs: 75 of 117, 84 of 108, and 20 of 20 applicants to the breast cancer, lymphoma, and lung cancer programs, respectively. A total of 166 participants have attended the ESO CCASPs between inception and 2021 (Table 3). The selection process for the 2021/2022 candidates of breast cancer, lung cancer, and lymphoma is ongoing. Up to now, three breast cancer programs (2015–2020), one lung cancer program (2018–2021), and four lymphoma programs (2013–2020) were conducted.

Breast Cancer Program

Sixty-seven participants attended the breast cancer program of whom 46% were medical oncologists. The median age at the time of enrolment was 39 years (range 31–59). Almost half the participants originated from European countries (58%) and 66% were females.

The mean percentage pass of the five-module tests was 79.3% (range 79–80%), and that of the certification exam was 83% (range 75–87%). The scoring categories were “Very Good,” “Good,” and “Satisfactory” in 41%, 39%, and 12%, respectively; 7% of participants failed the exam (Table 4). During the first organized breast cancer program, one person failed the certification exam on his first attempt but passed thereafter. Another person was disqualified during the third organized breast cancer program, she retook the exam and passed it.

Table 3 Demographics of the participating fellows

		Breast cancer	Lymphoma	Lung cancer
Number of fellows		67	83	16
Median age (range); years		39 (31–59)	40 (30–64)	38 (33–60)
Gender (M/F); %		34%/66%	43%/57%	69%/31%
Geographical origin; %	Europe	58%	75%	56%
	Middle East and Africa	18%	7%	6%
	Latin America	12%	5%	13%
	USA	1.5%	6%	-
	Australia and New Zealand	1.5%	6%	6%
	Asia	9%	1%	19%
	Other	16%	31%	25%
Specialty	Medical oncology	46%	13%	63%
	Hematology/oncology	-	51%	-
	Clinical oncology	13%	2.5%	6%
	Radiation oncology	10%	2.5%	6%
	Gynecology	15%	-	-
	Other	16%	31%	25%

Table 4 Exam results of the breast cancer program (CCB1–CCB3)

	CCB1 (18 fellows)			CCB2 (24 fellows)			CCB3 (25 fellows)		
	N/Q	Average grade	Pass %	N/Q	Average grade	Pass %	N/Q	Average grade	Pass %
Mean pass			79%			80%			79%
Module 1	60	43 (36–53)	72% (60–88%)	50	38 (30–45)	76% (62–90%)	50	38 (32–46)	80% (60–92%)
Module 2	28	23 (18–27)	82% (64–96%)	28	23 (18–26)	83% (64–93%)	28	23 (11–26)	80% (57–93%)
Module 3	26	22 (18–24)	83% (69–92%)	26	21 (16–25)	81% (65–96%)	26	21 (14–26)	81% (54–100%)
Module 4	57	44 (37–50)	77% (65–88%)	50	40 (30–47)	80% (60–94%)	50	37 (12–44)	73% (24–88%)
Module 5	50	44 (35–45)	81% (70–88%)	50	39 (31–47)	78% (62–94%)	50	40 (31–46)	79% (62–92%)
Final exam			75%			87%			87%

CCB: Breast Cancer Certificate of Competence Program, N/Q: number of questions

Module 1: epidemiology and prevention, biology, and clinical trials

Module 2: principles of diagnostics, ductal carcinoma in situ, gene predisposition

Module 3: the breast unit and management of locally advanced breast cancer

Module 4: management of early breast cancer

Module 5: management of advanced breast cancer, male breast cancer, and supportive therapies

Table 5 Exam results of the lung cancer program (CAS LU1)

	CAS LU1 (20 Fellows)		
	N/Q	Average grade	Pass %
Mean pass			81%
Module 1	52	41 (33–48)	79% (63–92%)
Module 2	48	39 (32–44)	82% (67–92%)
Module 3	60	49 (41–55)	82% (68–92%)
Module 4	60	48 (41–56)	81% (68–93%)
Final exam			100%

CAS LU: Lung Cancer Certificate of Competence Program, N/Q: number of questions

Module 1: epidemiology, prevention, biology, and pathology of lung cancer and other thoracic malignancies,

Module 2: principles of lung cancer research

Module 3: principles of non-small cell lung cancer, diagnosis and treatment

Module 4: principles of treatment of small cell lung cancer, malignant pleural mesothelioma, thymoma, and thymic cancers

Lung Cancer Program

Sixteen participants have attended the lung cancer program of whom 63% were medical oncologists. The median age at the time of enrolment was 38 years (range 33–60). Almost half the participants originated from European countries (56%) and 69% were females.

The mean percentage pass of the four-module tests was 81% (range 79–82%), and that of the certification exam was 100% (Table 5). The grading categories showed that participants scored “Very Good,” “Good,” and “Satisfactory” in 56%, 31%, and 13%, respectively. All participants passed the final certification exam.

Lymphoma Program

Eighty-three participants have attended the lymphoma program of whom 51% were hematologists-oncologists. The median age at the time of enrolment was 40 years (range 30–64). Participants were predominantly from Europe (75%), and 57% were females.

The mean percentage pass of the five-module tests was 83% (range 81.5–84%), and that of the certification exam was 88.5% (range 84–95%). The grading categories showed that participant scores were mainly “Very Good” and “Good” in 41% and 48%, respectively (Table 6). All participants passed the final certification exam.

Discussion

The COVID-19 pandemic has turned telemedicine and e-learning into essential tools in medical education and patients care. Telemedicine provides health care to patients via communication technologies. E-learning offers the advantage of direct contact between the students and lecturers in a didactic environment with flexible time organization and access to learning material. For instance, several online masters were already organized by different European academic faculties to address fellows and consultants [1–3, 9–12].

During the last 8 years, 166 participants were enrolled in the CCASP and graduated from the ESO CCASPs. Ninety percent have attended the breast cancer and lymphoma programs, while only 16 students participated in the recently established lung cancer program. Most of the fellows were medical or hematologist oncologists. More than 60% originated from Europe, and the rest were mainly from the

Table 6 Exam results of the lymphoma program (CCL1–CCL4)

	CCL1 (20 fellows)			CCL2 (15 fellows)			CCL3 (23 fellows)			CCL4 (25 fellows)		
	N/Q	Average grade	Pass %	N/Q	Average grade	Pass %	N/Q	Average grade	Pass %	N/Q	Average grade	Pass %
Mean pass			81.5%			82.5%			84%			83.5%
Module 1	40	33 (26–38)	83% (65–95%)	40	30 (25–36)	76% (63–90%)	40	33 (26–38)	83% (73–95%)	40	33 (24–38)	84% (60–95%)
Module 2	60	48 (40–58)	80% (66–96%)	60	50 (44–55)	84% (73–92%)	60	49 (36–59)	82% (60–98%)	60	47 (38–53)	78% (63–88%)
Module 3	60	50 (41–59)	83% (70–98%)	60	50 (44–59)	84% (73–98%)	60	51 (41–57)	85% (73–95%)	60	53 (46–58)	89% (77–97%)
Module 4	60	48 (39–56)	80% (72–92%)	60	51 (46–57)	86% (77–95%)	60	51 (46–59)	86% (77–98%)	60	50 (45–53)	83% (75–88%)
Final exam			95%			87%			88%			88.5%

CCL: Lymphoma Certificate of Competence Program, N/Q: number of questions

Module 1: basic research, epidemiology, and pathology of lymphoma

Module 2: principles of diagnostics, management and clinical trials

Module 3: lymphoma subtypes Part I: Mature B-cell neoplasms

Module 4: lymphoma subtypes Part II: post-transplant lymphoproliferative disorder, T-cell and NK-cell neoplasms, and Hodgkin lymphoma

Middle East/Africa, Latin America and Asia, and very few from the USA and Australia. All the participants who took the final exam passed it. In total, 43% have scored “Very Good” and 45% “Good Score.”

ESO CCASP builds on e-learning, at least partly, to engage students and teaches the latest developments in managing patients with malignant tumors by novel drugs, modern equipment, or recent surgical methods. It focuses on the clinical and scientific competencies required for improving quality in the management of these cancer patients. Blended e-learning training for postgraduate health professionals is relatively new and integrates online and face-to-face learning experiences. It is getting more popular and improves the participants’ clinical competencies through shifting the education orientation from teacher-centered to student-centered [13–15]. In 2018, University of Ulm published the first findings on the second cohort of ESO CCASP in breast cancer [16]. Most of the participants were medical or radiation oncologists and originated from low-middle, upper-middle-, and high-income countries. Surgeons as well as radiation and medical oncologists considered the program highly educational and well organized [16].

Conclusion

The ESO CCASP is an academically recognized postgraduate program that seems to successfully develop the knowledge of the participants in the fields of breast cancer, lymphoma, and lung cancer. The contribution of the education offered by the Ulm and Zurich Universities was highly rated among the participants. Moreover, these programs favor interprofessional collaborations through yearly alumni dinners organized for the current and former participants. During the coming years, ESO will continue to develop these programs and will strongly recommend it to oncologists and other physicians involved in the care of cancer patients. Future perspectives include the launching of CCASP in gastrointestinal cancers and the development of CCASP in prostate cancers and gynecological cancers.

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Declarations

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