

Proposed amendment to the Iraqi Council Medical Specialization in Clinical Pediatric Hematology Oncology Single Track Study

Introduction

The current study of clinical Hematology Oncology is a three-year subspecialty program following a four-year Paediatrics fellowship. Despite its rigorous nature, this program has become unattractive due to its lengthy duration, with only a few applicants. The country still has a dire need for clinical hematology specialists, and this specialty is constantly evolving, particularly following the widespread use of bone marrow transplantation as a treatment for a significant number of blood diseases. There are also plans to establish several hospitals and departments to treat blood cancers and to establish units to perform bone marrow transplantation in Iraq. Therefore, developing and sustaining this program is an important contribution to this field.

The study committee proposes developing the study of Paediatric clinical Haematology Oncology into a single track similar to the study of oncology and the study of neurology, by combining the study of paediatrics with the study of clinical haematology oncology. The study period will be five years: two years for paediatrics and three years for clinical haematology oncology, as indicated in the proposed study project.

Iraqi Council for Clinical Haematology Oncology Study Project

The study will be under the umbrella of the Scientific Council for Paediatrics and supervised by a committee affiliated with the Council's presidency.

Admission requirements are the same as the general admission requirements for studies by the Iraqi Board for Medical Specialties, provided that the applicant has completed the periodic residency and the previous residency in hematology, oncology, or paediatrics.

Physicians who have obtained a fellowship from the Iraqi Board in paediatrics or its equivalent may apply directly to the second part of the clinical hematology study.

Study will be conducted according to the previous residency system.

Training Centres

- 1- Medical City/Children Welfare Teaching Hospital, Central Child Hospital, and other centres accredited by the Paediatrics Council for paediatrics training.
- 2- Radiation and Nuclear Medicine Hospital.
- 3- Hematology Division, Hematology Laboratory, and Bone Marrow Transplant Unit in the Medical.

Study Supervising Committee

- 1- Emeritus Professor Salma Al-Hadad (College of Medicine, University of Baghdad, Children Welfare Teaching Hospital, Medical City)
- 2- Professor Dr. Mazin Faisal Al-Jadiry (College of Medicine, University of Baghdad, Children Welfare Teaching Hospital, Medical City)
- 3- Consultant Paediatrician Allawi Noor Hussein, Supervisor of the Paediatrics Clinical Hematology Training Centre at the Central Children's Hospital/Yarmouk Teaching Hospital
- 4- Professor Dr. Miad Kadhim, Supervisor of the Clinical Hematology Study at the Basra Training Centre

Aims of the study:

To graduate specialists in the diagnosis and treatment of paediatric hematology oncology who possess the ability and skills to:

1. Deal with patients with various types of paediatric hematology oncology.
2. Administer all types of chemotherapy and participate in palliative care.
3. Perform autologous bone marrow transplants.
4. Collaborate with various laboratory and therapeutic specialties.
5. Commitment to following guidelines and ethical standards in the diagnosis and treatment process.
6. Participation in medical research.
- 7. Participation in continuing medical education activities.**

Study Curriculum

i. Paediatrics Training:

It lasts for two years, a residency similar to that of Iraqi Board of Paediatrics students.

First year: Residency in paediatric units at one of the accredited centres with supervisors or trainers for Board of Paediatrics students. This also includes work in the paediatric emergency room. The training includes participation in all scientific activities of the Board of Paediatrics, such as the journal club, weekly clinical meeting, death conferences, theoretical lectures, and others.

At the end of the year, the student takes the initial written exam with first-year Board of Paediatrics students. The passing grade is 70%, and the student has three attempts.

The student does not advance to haematology oncology training until he passes the initial paediatric exam.

Second year: Paediatrics subspecialties training:

- 1- Two months cardiology and respiratory diseases,
- 2- Two months gastroenterology and neurology,
- 3- Two months of kidney and endocrine diseases,
- 4- Two months of haematology oncology,
- 5- Two months in the emergency room and bleeding disorders diseases,
- 6- Two months in the neonatal and preterm care units.

The student takes the clinical skills exam at the end of the second year.

Scientific activities in which the student participates:

1. Weekly clinical meeting
2. Death conferences
3. Journal club
4. Major clinical rotations in the paediatric units where he works

Required skills:

1. Spinal fluid aspiration
2. Bone marrow, pleural, peritoneal, and liver biopsies.

II. Training in Clinical Haematology oncology

Study Methods:

1. Seminars
2. Clinical training during daily work in the Haematology oncology Wards and its affiliated consultation clinic.
3. Weekly scientific meetings and seminars.
4. Self-study.
5. Records registry.
6. Research project.

First Year: Serves as a senior resident:

*Under the supervision of a clinical haematology oncology supervisor or trainer: Diagnosis and treatment of haematological malignancies, anaemias, and bleeding disorders (under the supervision of a trainer). They admit and monitor patients, send and follow up lab tests, write and monitor patient treatment, conduct morning clinical rounds with the specialist and final-year students, and conduct evening rounds. They also participate in the department's scientific activities.

*Weekly seminar

*Weekly clinical meeting

*Weekly laboratory training

*Monthly journal club

*First-year haematology oncology theoretical curriculum: One hour per week for 30 weeks

Module 1: Hematopathology:

1-hematopoiesis.

2-anemias.

3-acute leukemias

4-lymphoproliferative disorders.

5-myeloproliferative disorders.

Module 2: red blood cells disorders

1-approach to anemia patient

2-iron deficiency anemia.

3-megaloblastic anemia.

- 4-bone marrow failure.
- 5-anemia of chronic diseases.
- 6-iron overload anemia.
- 7-hemolytic anemia: diagnostic approach
- 8-RBC membrane defects.
- 9-enzymopathies.
- 10-hemoglobinopathies 1.
- 11-hemoglobinopathies 2.
- 12- immune hemolysis.
- 13-fragmentation hemolysis.
- 14- myelodysplasia.
- 15-transfusion medicine.

Module 3: pharmacology of anticancer chemotherapy

- 1- Classes of chemotherapeutic agents
 - 2- Alkylating agents
 - 3- Antitumor antibiotics
 - 4- Vinca alkaloids
 - 5- Antimetabolites
 - 6- Targeted therapy
 - 7- Monoclonal antibodies
 - 8- Immune modulating and antiangiogenic drugs
 - 9- High dose chemotherapy
- The candidate undergoes theoretical and clinical evaluation in paediatric Haematology oncology at the end of the first year

Second year: Serves as a senior resident in the following subspecialties:

- 1- 1 month at the Radiation and Nuclear Medicine Hospital.
- 2- 1 month at the Histopathology Laboratory.
- 3- 1 month at the Haematology Laboratory.
- 4- 1 month at the Blood Bank.
- 5- 1 month at the bleeding disorders Centre.
- 6- 1 month at the Thalassemia Centre.
- 7- 6 months at the Bone Marrow Transplant Centre.

*Part of the subspecialties may be replaced by training at a reputable scientific centre abroad for 3-6 months, especially for bone marrow transplantation training.

*Theoretical curriculum for the second year: 1 hour per week for 28 weeks.

Module 4: white blood cells disorders

- 1- Immunophenotyping.
- 2- Genetic studies: cytogenetics, FISH study, PCR.
- 3- Non-malignant WBC disorders.
- 4- Immune deficiency: Hereditary and acquired.
- 5- Acute lymphoblastic leukaemia
- 6- Acute non lymphoblastic leukaemia
- 7- Chronic myeloid leukaemia.
- 8- Classification of lymphoproliferative disorders
- 9- B & T cell NHL
- 10- Histiocytic disorders
- 11- Hodgkin disease
- 12- Myeloproliferative disorders
- 13- Immune deficiency associated haematological malignancies

Module 5: research and statistics

- 1- How to design a research project.
- 2- Statistical methods 1
- 3- Statistical methods 2
- 4- Ethical issues
- 5- How to write a paper

Module 6: bone marrow transplantation:

- 1- Immunology of BMT
- 2- Autologous BMT
- 3- Allogeneic BMT
- 4- Stem cell collection by cell separator machines and cryopreservation
- 5- Preparation and care of transplanted patient

***Third Year:**

- 1- Serves as a senior resident in the haematology oncology ward and its associated consultation clinic. Responsible for conducting daily morning and evening rounds on inpatients. Responsible for organizing treatment and supervising the dispensing of chemotherapy drugs in the ward and consultation clinic, while also participating in the aforementioned scientific activities.
- 2- Covers the work in the bone marrow transplant centre, preparing patients for transplantation, and following up with them.
- 3- Conducts weekly training in the haematology laboratory.

Theoretical curriculum for the third year: 1 hour per week for 16 weeks

Module 7: hemostasis and thrombosis:

- 1- Normal hemostasis
- 2- Approach to a patient with generalized bleeding tendency
- 3- Vessel disorders
- 4- Platelet disorders 1
- 5- Platelet disorders 2
- 6- Hereditary coagulation disorders
- 7- Acquired coagulation disorders
- 8- Hereditary thrombotic disorders
- 9- Acquired thrombotic disorders
- 10- Approach to a patient with thrombophilia

Module 8: palliative care

- 1- Pain management
 - 2- Antiemetics
 - 3- Control and treatment of infections in immunocompromised patient 1
 - 4- Control and treatment of infections in immunocompromised patient 2
 - 5- Nutritional support and insertion and care of Hickman catheter
 - 6- Psychological support and ethical issues
- *The student conducts a scientific research project under the supervision of a supervisor in the field of specialization. This project begins in the second year of haematology training and is discussed

before the final exam. It is a requirement for admission to the final exam.

*** Required Skills**

1. Perform a bone marrow aspirate & biopsy.
2. Collect samples of various body fluids for cytological examination.
3. Collect samples of lymph nodes and tumours from various areas of the body using radiographic or fluoroscopy guidance for cytological and histological examination.
4. Inject chemotherapy drugs into the spinal fluid.
5. Inject chemotherapy drugs intravenously at normal and high doses.
6. Perform peripheral blood cell and stem cell separation using cell separators devices.
7. Perform autologous bone marrow transplantation under the supervision of specialists in this field.

The required skills are documented with the instructor's signature (logbook).

The student submits a clinical record.

Final Examination:

*The student takes the final exam to obtain the specialty. It consists of a two-paper written exam with a passing score of 70%, and a clinical and practical exam consisting of a long-case exam, a short-case exam, and a laboratory exam, with a pass rate of 70%. The number of attempts is four. After the second attempt, students are allowed to take two more attempts as an external student. If they fail, they are allowed to take the initial exam. After passing, they may take two additional attempts, after which their registration will be upgraded.

Note:

The Council seeks to send students for training for 3-6 months at a reputable scientific centre outside Iraq to enhance their experience. This is preferable for students in their second year of bone marrow transplantation.