UCLA-OLIVE VIEW INTERNAL MEDICINE RESIDENCY

HEMATOLOGY-ONCOLOGY CONSULT CURRICULUM

Target: PGY 1-3
Updated May 2021

A. EDUCATIONAL OVERVIEW

The overall purpose of the Hematology-Oncology Consult Service Rotation is to train residents to competently care for hospitalized patients and outpatients presenting with signs and symptoms of malignancy or benign or malignant hematologic disorders. They will learn to: recognize the common presenting signs and symptoms; perform the standard diagnostic evaluation to better define the causative disorder; know when and how to consult a Hematologist-Oncologist; and appreciate the multidisciplinary approach to the treatment of malignancy and hematologic disorders.

B. ROTATION DESCRIPTION AND STRUCTURE

The Hematology-Oncology consult service is a major part of the curriculum in Hematology-Oncology alongside the Hematology-Oncology ward service. Training on the consult service spans the three years of training, and is composed of clinical experiences on the inpatient consult service and outpatient clinics. The inpatient consult service is assigned during a dedicated two-week rotation block. Outpatient clinic is assigned during Ambulatory Medicine week and during the inpatient consult block.

Training during the Inpatient Consult service rotation will take place at Olive View-UCLA Medical Center (OVMC). During the rotation on the Hematology-Oncology Inpatient Consultation service, trainees will evaluate hospitalized patients with all types of solid and hematologic malignancies as well as benign hematologic disorders, and participate in multidisciplinary tumor boards and pathology conferences (including Bone Marrow rounds, Lymphoma Conference, and Multidisciplinary Breast Conference). In addition, they will provide patient care in the outpatient Hematology and Oncology clinics and Special Treatment Center at OVMC, where they will see patients with ongoing hematologic and oncologic disorders undergoing therapy, as well as survivors, and patients with chronic benign conditions.

Monday	Tuesday	Wednesday	Thursday	Friday
		8:00 am **Oncology Clinic** Clinic C		
12:00 pm Noon Conference	12:00 pm Noon Conference	12:00 pm Noon Conference	12:00 pm Noon Conference Hem-Onc Conferences: 1st: Thoracic Conference 2nd: Research/M&M 3rd: Breast Conference 4th: Journal Club	12:00 pm Noon Conference
1:00 pm **Hematology Clinic** Clinic C		1:00 pm **Oncology Clinic** Clinic C		1:30 pm **Bone Marrow Rounds** Dr. Lo, Pathology

C. GOALS & OBJECTIVES

Residents are expected to achieve the common goals and objectives of clinical care (see separate document) in addition to the following goals and objectives by the completion of training.

1. **Goal: Provide the initial evaluation and management of common hematologic findings: anemia, thrombocytopenia, bleeding disorders, thrombotic disorders.**
    - Identify the pathologic hematologic disorder and interpret relevant history, exam findings, and lab results to develop a concise differential diagnosis for anemia. (PC1)
    - Order additional labs and studies as appropriate to confirm the etiology of anemia, thrombocytopenia, bleeding disorders, and thrombotic disorders. (PC1/2)
    - Select and explain appropriate treatments based on the identified etiology, including vitamin repletion, erythroid and myeloid growth factors, and prophylaxis. (PC1-3, MK1)
    - Refer appropriate patients for consultation by a hematologist or other subspecialty services. (PC5)

2. **Goal: Diagnose and provide the basic management for hematologic emergencies.**
    - Identify patients with the signs, symptoms, and/or diagnostic findings that indicate or raise suspicion for these hematologic emergencies: (PC1-3/5, MK1)
        - Acute leukemia
        - Thrombotic thrombocytopenic purpura (TTP)
        - Antiphospholipid syndrome (APLS) crisis
        - Tumor lysis syndrome
    - Anticipate, identify, and manage the complications of these hematologic emergencies. (PC2/3, MK1)
    - Consult oncology and other services in a timely manner to facilitate the timely management of the patient. (PC5)

3. **Goal: Identify and provide the basic management for oncologic emergencies.**
    - Diagnose these oncologic emergencies based on the patient's signs, symptoms, or diagnostic findings: (PC1/3, MK1)
        - Spinal cord compression
        - Tumor lysis syndrome
        - Superior vena cava syndrome
        - Pericardial tamponade
        - Hyperviscosity syndrome
        - Hypercalcemia
        - Symptomatic brain metastasis
    - Anticipate, identify, and manage the complications of these oncologic emergencies. (PC2/3, MK1)

- Consult oncology and other services in a timely manner to facilitate the timely management of the patient. (PC3/5)

4. **Goal: Provide the initial evaluation and management for new diagnoses of cancer.**
    - Make new diagnoses of cancer based on signs, symptoms, lab data, radiographic findings and pathology results. (PC1, MK1)
    - Deliver a cancer diagnosis to the patient and family members in an empathetic, clear manner. (ICS1, PROF1/2)
    - Recommend and interpret additional testing to stage the cancer, provide prognostic information, and help determine optimal treatment strategies. (PC1-3, MK1)
    - Explain the role of other DHS facilities and Medi-Cal providers in offering tertiary services that are not available at OVMC. (SBP3)

5. **Goal: Provide supportive care to cancer patients and cancer survivors.**
    - Select and explain bisphosphonate therapy for prevention of fractures and treatment of hypercalcemia. (PC2/3, MK1)
    - Identify and manage common complications of active malignancies: (PC1-3, MK1)
        - Bone metastasis
        - Brain metastasis
        - Malignant effusions/ascites
        - Malignancy-associated pain
        - Bowel and biliary obstruction
    - Identify and manage common complications of cancer treatment (chemotherapy, hormone therapy, radiation therapy), including emesis, diarrhea, pain, and infection. (PC1-3, MK1)
    - Identify and manage late complications of cancer treatment, including cardiac, pulmonary, and gonadal dysfunction, and secondary malignancies. (PC1-3, MK1)
    - Identify and address the cultural, socioeconomic, and psychosocial factors to improve the medical care of patients with cancer. (PC1, PROF3)
    - Refer appropriate patients for palliative care consultation. (PC5)

6. **Goal: Evaluate cancer risks and practice cancer prevention.**
    - Identify the risk factors for the development of cancer. (MK1)
    - Describe and advocate for recommended cancer screening practices for breast, lung, colorectal, cervical, and prostate cancer. (PC2/3, SBP3)
    - Explain and counsel patients on strategies for cancer prevention, including vaccination and smoking cessation. (PC2/3, ICS1)
    - Describe hereditary cancer syndromes, including manifestations and associated biomarkers: BRCA mutations, Lynch syndrome (MK1)

D. CORE TOPICS IN HEMATOLOGY & ONCOLOGY

At the completion of the Hematology-Oncology curriculum the resident will be able to explain the differential diagnosis, general diagnostic approach, and appropriate treatment plan for the following conditions and diseases: (MK1)

- Hematology Disorders
    - Anemia: iron-deficiency anemia, anemia of chronic disease, hemoglobinopathies, hemolysis
    - Bleeding Disorders: thrombocytopenia (primary and secondary), qualitative platelet disorders (including inherited and acquired von Willebrand Disease)
    - Thrombotic Disorders: inherited thrombophilias, acquired thrombophilias (heparin induced thrombocytopenia [HIT], antiphospholipid syndrome [APLS], disseminated intravascular coagulation [DIC])
    - Stem Cell Disorders
        - Aplastic anemia
        - Myelodysplastic syndrome (MDS)
        - Myeloproliferative disorders: polycythemia rubra vera, primary myelofibrosis, essential thrombocythemia, chronic myelogenous leukemia
    - Hematopoietic Malignancies
        - Myeloid leukemias: acute myeloid leukemia (AML), acute promyelocytic leukemia (APML)
        - Lymphoproliferative diseases: acute lymphocytic leukemia (ALL), chronic lymphocytic leukemia (CLL), hairy cell leukemia
        - Hodgkin Lymphoma
        - Non-Hodgkin Lymphoma, including diffuse large B cell lymphoma, follicular lymphoma, marginal zone lymphoma, mantle cell lymphoma, T cell lymphoma
        - Plasma cell dyscrasias: multiple myeloma, Waldenstrom’s macroglobulinemia, amyloidosis, monoclonal gammopathy of undetermined significance (MGUS)
    - Leukocyte Disorders: neutrophilia, neutropenia, lymphadenopathy, immune deficiency, eosinophilia
- Oncology Disorders
    - Oncologic Emergencies
        - Spinal cord compression
        - Tumor lysis syndrome
        - Superior vena cava syndrome
        - Pericardial tamponade
        - Hyperviscosity syndrome
        - Hypercalcemia
        - Symptomatic brain metastasis

- Solid tumors by organ system: including the molecular biology of cancer (gene regulation, oncogenes, growth factors, chromosomal abnormalities, molecular biomarkers)
  - Breast cancer
  - Head and neck cancer
  - Lung cancer
  - Gastrointestinal cancer: esophageal, gastric, pancreatic, cholangiocarcinoma, hepatocellular, colon, anal
  - Genitourinary cancer: germ cell, bladder, renal, prostate
  - Gynecologic: endometrial, ovarian, cervical, gestational trophoblastic disease
  - Melanoma
  - Sarcoma
  - Cancer of unknown primary: adenocarcinoma, squamous cell carcinoma, neuroendocrine, undifferentiated

E. TEACHING METHODS

Clinical education is primarily delivered through direct patient care and daily rounds with the Hematology-Oncology attending and fellow. All cases will be presented and reviewed in order to highlight the diagnostic and treatment approach for particular clinical presentations. Instruction will be case-driven, with didactic sessions as well as bedside teaching to inform physical examination skills. Housestaff will also attend weekly Bone Marrow rounds to review peripheral smears and bone marrow studies. Critical aspects of hematopathology will be reviewed as they pertain to accurate diagnosis. In addition, housestaff will participate in multidisciplinary clinical case discussions. Housestaff will round with the palliative care service on shared patients and will learn about end of life care while participating in family discussions with physicians, nurse specialists, and social workers.

During this rotation, housestaff will also participate in conferences, as described above as well as monthly Oncology Journal Club, Breast Multidisciplinary Tumor Board, Lymphoma Conference, and weekly Hematology-Oncology literature review conferences. When not committed to Hematology-Oncology conferences or urgent patient care activity, housestaff are required to attend the daily Noon Conference series.

F. SUPERVISION AND EVALUATION

Attending physicians and fellows will directly observe the residents' interaction with patients and their families, colleagues, and support staff. Fellows and faculty will review consultation notes.

Attending physicians will give continuous verbal feedback on the resident's performance during the rotation.

The supervising attending will electronically submit a written evaluation based on the above objectives and competencies at the end of the rotation.

G. EDUCATIONAL RESOURCES

The following resources are available in the Hem-Onc fellow's office:

- Topic-specific, electronic, PDF-based library
- Library of textbooks and monographs
- Dual-headed microscope

The multi-headed microscope for review of peripheral blood smears and bone marrow studies is also available in the hospital.

Electronic access to major journals in Hematology and Oncology as well as web-based resources maintained by professional societies for hematological and oncologic disorders is available through the intranet at Olive View-UCLA Medical Center and through UCLA.

- UpToDate
- Dynamed (coming)
- Harrison's Principles of Internal Medicine
- PubMed
- Olive View-UCLA Health Science Library
- UCLA Health Library