

## Coagulation

### 1. **Rotation Name**

Coagulation

### 2. **Educational Purpose of the Rotation**

Clinical experience is provided in an inpatient and outpatient setting with fellows participating in three half day outpatient clinics, consisting of six to eight patients per clinic, presenting a variety of hematologic conditions: anemia, thrombocytopenia, porphyria, hemochromatosis, hemoglobinopathy, etc., in addition to the many thrombotic and hemorrhagic disorders. Approximately a third of the patients seen in these clinics will be new to our service, requiring an extensive evaluation.

In addition to these clinics, the fellows will participate in a monthly half day clinic for patients with hemophilia, von Willebrand's disease and related inherited bleeding disorders. This comprehensive bleeding disorders clinic is staffed by six health care professionals and is funded by the Department of Health and Education through the Hemophilia Foundation of Michigan.

### 3. **Staffing of the Rotation**

Attending faculty member – Dr. John Penner

### 4. **Resources**

Outpatient clinics are housed in the MSU Bleed Disorders Clinic at the MSU Clinical Center.

### 5. **Patients**

The attending physician maintains ultimate responsibility for patient care. Residents are exposed to a variety of hematologic conditions including anemia, thrombocytopenia, porphyria, hemochromatosis, hemoglobinopathy in addition to the many thrombotic and hemorrhagic disorders.

### 6. **Responsibilities**

On the clinical services, the fellow will see the patient independently, obtain history and do a physical examination, before discussing the case with the attending physician, Dr. Penner.

## 7. **Instructional Methods**

Faculty members teaching the hematology residents are responsible for:

1. Supervision of the resident in accordance with the supervision policy.
2. Responding promptly to the resident's questions/concerns.
3. Providing the resident with ongoing performance feedback and skill progression.
4. Increasing the level of responsibility as the individual skill level progresses.

## 8. **Evaluation**

At the end of the rotation, fellows will be expected to have a knowledge of basic mechanisms involved in blood coagulation, the pathophysiology of thrombosis and hemostasis, and thorough knowledge of therapeutic agents employed to manage hemostatic, as well as thrombotic disorders.

Specific disorders covered during rotation are as follows:

1. Hypercoagulability and the inherited thrombophilic disorders
  - a. Factor V Leiden
  - b. Prothrombin 20210
  - c. Anti-thrombin III deficiency
  - d. Protein C and S deficiency
  - e. Homocysteinemia
2. Thrombotic thrombocytopenic purpura
3. Hemolytic uremic syndrome
4. Disseminated intravascular coagulopathies
5. Heparin induced thrombocytopenia
6. Hemophilia A and B
7. von Willebrand's disorder
8. Thrombocytopathias
9. Autoimmune thrombocytopenias and refractory autoimmune thrombocytopenia
10. Therapeutic agents employed for hemostasis
  - a. platelet concentrates
  - b. fractionated plasma products
  - c. recombinant concentrates of Factor VIII, IX, VIIA, Prothrombin complex concentrates
11. Therapeutic anticoagulant products
  - a. Heparin
  - b. low molecular weight heparins
  - c. direct thrombin inhibitors (Argatroban, Leparudin)
12. Warfarin products, as well as Indandiones
13. Antiplatelet agents

- a. Aspirin
  - b. Clopidogrel
  - c. Ticlopidine
  - d. Abciximab
  - e. Dipyridamol
14. Fibrinolytic agents
- a. Streptokinase
  - b. Urokinase
  - c. Tissue plasminogen activators
15. Fibrinolytic inhibitors
- a. Trasylol
  - b. Amicar

**9. Clinical Oncology - Rotation Competency Objectives**

1. Patient Care

- a) By the conclusion of the rotation, the Hematology/Oncology Resident will demonstrate the ability to perform an appropriate oncology history and physical, documenting the findings in an appropriate consultative summary, with a differential diagnosis list.
- b) By the conclusion of the rotation, the Hematology/Oncology Resident will be able to perform the above skills and be able to independently generate an appropriate management plan.
- c) Demonstrate the ability to complete an efficient work up inclusive of history and physical, diagnostic procedures, problem list, working diagnosis and treatment plan.
- d) Follow assigned patients appropriately.
- e) Demonstrate the ability to respond appropriately to abnormal test results.

2. Medical Knowledge

- a) All residents will be evaluated by the supervising faculty for appropriate analytic approach to oncologic conditions. These include solid tumors including tumors of the lung, breast, bowel, ovary, uterus and other organs as well as hematopoietic malignancies such as lymphomas and leukemias. Residents will be evaluated for satisfactory basic and clinical knowledge of medical aspects of oncology.

- b) Demonstrate a sound knowledge base pertinent to the field of hemostasis and thrombosis.
3. Interpersonal and Communication Skill
- a) Residents are expected to demonstrate professional communication skills throughout their interactions with oncology patients. In addition, residents will be assessed for appropriate communication with MSU's office staff, including setting clear expectations for work hours and outpatient/inpatient duties. Residents will be expected to act as a constructive and proactive member of the practice.
  - b) Demonstrate the ability effectively work with other members of the health care team including other residents, attending physicians and other health care providers.
  - c) Communicate effectively with patients and their families
4. Professionalism
- a) Throughout the rotation, residents are expected to exhibit reliability in their clinical duties, as well as integrity and respect in their interactions with patients and colleagues.
  - b) Residents will be able to demonstrate appropriate consultative principles of communication and responsiveness to professional consultative requests.
5. Practice Based Learning and Improvement
- a) Rotating residents will demonstrate self-initiative in the use of information technology available via the MSU electronic library to access and retrieve materials for self-education via computer terminals located in the resident offices and throughout the clinic.
  - b) Rotating residents will be expected to show progressive learning throughout the rotation, with emphasis on learning from any cognitive or procedural errors. They are also expected to facilitate any quality improvement initiatives in place at MSU's clinical office practice.
6. Systems Based Practice
- a) All residents will demonstrate conscientious awareness of the impact of their professional activities at the MSU office practice site, and will conscientiously avoid inappropriate use of the practice resources.
  - b) Residents must demonstrate understanding of cost-effectiveness of care incorporating cost-effectiveness into their development of diagnosis and treatment plans.