PATH 885J: Hematopathology/Flow Cytometry

Course Director: John Lazarchick, MD
Email: lazarj@musc.edu

Course Coordinator: Linda McCarson
Telephone #: 843-792-2711
Email: mccarsli@musc.edu

BLOCK	#	BLOCK	#	BLOCK	#	BLOCK	#
Block 1A	0	Block 3A	0	Block 5A	1	Block 7A	1
Block 1B	0	Block 3B	0	Block 5B	1	Block 7B	1
Block 1C	0	Block 3C	0	Block 5C	1	Block 7C	1
Block 2A	0	Block 4A	0	Block 6A	1	Block 8A	1
Block 2B	0	Block 4B	0	Block 6B	1	Block 8B	1
Block 2C	0	Block 4C	0	Block 6C	1	Block 8C	1

COURSE DESCRIPTION:
This course is designed to provide the student an opportunity to participate in the laboratory evaluation and diagnosis of malignant and non-malignant hematologic disorders. The student will have a focused program on morphology, immunohistochemistry and flow cytometric analysis of peripheral smears, bone marrow aspirates and biopsies and lymphoid tissues, nodal and non-nodal. Correlation of these findings with the clinical findings will be emphasized.

LEARNING GOALS & OBJECTIVES: At the completion of this clinical rotation students should be able to do the following:
1. Demonstrate how to use a multidisciplinary approach to the diagnosis of hematologic malignancies utilizing morphology, immunophenotyping, cytogenetics, and molecular analysis including FISH and PCR. (MK3, PC2, PR1, CS3, PL3, SL2)
2. Distinguish between acute and chronic leukemia's and determine cell lineage and any associated chromosomal abnormalities based on morphology, immunophenotyping, and genetic analyses. (MK3, PC2, PR1, CS3, PL3, SL2)
3. Distinguish between benign and malignant plasma cell hyperplasic utilizing clinical correlation, classical immunoelectrophoresis and immunofixation techniques in chemistry, bone marrow analysis, and cytogenetics. (MK3, PC2, PR1, CS3, PL3, SL2)

INSTRUCTIONAL METHODOLOGIES & ROTATION ACTIVITIES: Students on this rotation will be expected to learn and achieve the educational goals and objectives through the following methodologies and activities:
1. Analysis of CBC data, peripheral smear interpretation and examination of bone marrow aspirate and biopsy material and the correlation of such with the patients' clinical history and ancillary laboratory data.
2. Exposure to principles of flow cytometry to immunophenotype hematopoietic cells and to become familiar with lineage-specific CD markers to distinguish myeloid, lymphoid, erythroid and megakaryocytic markers. Results on patients will be reviewed with the student by the attending physician.
3. Review of methodology involve with karyotyping marrow or node hematopoietic cells and review of patient results with the attending staff and laboratory supervisor.
4. Review of the principles involved in FISH analysis and PCR to analyze for specific chromosomal abnormalities associated with acute and chronic leukemia of myeloid or review session on lymphoid origin and lymphomas. The attending staff and laboratory personnel will review all pertinent cases with the student.

PATIENT ENCOUNTERS: Students will be expected to work-up patients with these specified conditions:
1. Observe and/or participate in obtaining at least one bone marrow aspirate/biopsy on a patient who is suspected or known to have a hematologic malignancy.
2. Present clinical history, physical findings, ancillary laboratory data, morphologic assessment, flow cytometric interpretation, cytogenetic analysis and molecular study results on a patient either a myeloproliferative or myelodysplastic disorder.

EVALUATION / FEEDBACK METHODS: Students will be evaluated using the following methods:
1. E*Value Clinical Performance Evaluation.
2. Quiz on concepts/principles in response to routine questions about pathologic diagnosis of case slide being reviewed.
3. Ability to document patient information through synthesis of clinical data and additional laboratory tests.
4. Ability to present clear, concise, and well-organized case presentations.
5. Skill, initiative, and capability as a member of the medical team on service in their diligence in completing assignments in a reliable and conscientious manner.
6. Ability to investigate and evaluate their diagnostic and consultative practice, appraise and assimilate scientific evidence, and improve their patient care practices.

Will students be expected to participate in call? ☐ YES ☒ NO