

CURRICULUM FOR CRITICAL CARE NEUROLOGY FELLOWSHIP

Objectives: Our mission is to save every neuronal tissue, which is in danger. To achieve such goals we need to obtain comprehensive training in critical care neurology that will master the individual to provide appropriate care to the critically ill neurological patients. Fellow/resident will be trained in the following guidelines during the training period

Theoretical knowledge in Critical Care

1. Cardiac Hemodynamics including pulmonary artery catheter
2. Blood volume resuscitation
3. Acute heart failure and management
4. Arrhythmias and management
5. Tissue oxygenation
6. Acidosis and management
7. Alkalosis and management
8. Respiratory failure and management
9. Ventilator and its use in critically ill patients
10. ARDS and management
11. Acute oliguric renal failure (AORF)
12. Sepsis and use of pressors
13. Role of TEE in evaluating acute hemodynamic abnormalities

Theoretical Knowledge in Neurocritical Care

1. Cranial Vault Mechanics and cerebral physiology
2. Brain tissue oxygenation
3. Cerebral blood flow and SPECT
4. Intracranial Pressure and cerebral perfusion
5. Management of increased intracranial pressure
6. Brain edema and management
7. Subarachnoid hemorrhage and management
8. Cerebral vasospasm and management
9. Intracranial hemorrhage and management
10. Malignant MCA stroke and management
11. Acute stroke and management
12. Status epilepticus and management

Courses:

1. Transcranial Doppler

2. Carotid Doppler
3. TEE

Technical Skills:

1. Intubations of patients
2. Arterial line placement
3. Central line placement
4. Pulmonary arterial catheter placement and its interpretation
5. Jugular bulb catheter placement and its interpretation
6. Emergent TEE and its interpretation (optional)
7. TCD and its interpretation
8. Carotid Doppler and its interpretation

Meetings and seminars:

1. Weekly stroke meeting
2. Bimonthly ICU didactic conference
3. Weekly journal club
4. Two presentation in each month in related topics
5. Attending critical care, stroke and neurology meetings

After completion of this fellowship the trained neurointensivist will be able to master in the following:

A. In the Neurocritical setting

1. Evaluating and managing a critically ill neurological patient
2. Evaluation and managing a critically ill patient in the intensive care setting
3. Managing patients with subarachnoid hemorrhage
4. Managing patients with intracranial hemorrhage
5. Managing patients with acute stroke and malignant stroke
6. Management of patient with increased intracranial pressure
7. Management of patients with brain herniation
8. Management of patients with impaired perfusion and oxygenation
9. Management of hypertensive encephalopathy
10. Critical management of meningitis and encephalitis
11. Management of critically myasthenia gravis patients
12. Management of critically ill patients with GBS
13. Management of status epilepticus

B. In the Medical Critical Care setting

1. Management of patients with acute heart failure
2. Management of acute myocardial ischemia in the intensive care setting
3. Management of arrhythmia in the intensive care setting
4. Management of patients with hemodynamic abnormalities
5. Management of patients with respiratory failure
6. Ventilator management
7. Management of pneumonia and atelectasis in the intensive care setting
8. Management of patients with ARDS
9. Management of patients with AORF
10. Management of patients with sepsis
11. Critical care management of acute blood loss and GI bleed
12. Management of patients with impaired acid- base imbalance
13. Management of patients with impaired tissue oxygenation

Research

All fellows are strongly encouraged to participate in all ongoing clinical trials. It is mandatory for the fellows to participate in clinical and laboratory prospective and retrospective studies that are active and ongoing in the fields of stroke and critical care.

Duties

Managing patients in the intensive care setting and in the stroke unit setting. Fellows are also responsible for acute stroke calls and neurocritical care unit coverage (home calls during week-ends and off-hours). All above activities will be supervised by neurointensivists and stroke attendings

Elective Rotations

Diagnostic Neuroradiology/Neuroimaging
Interventional Neuroradiology
Neurosurgery
Medical Intensive Care Unit/Coronary Care Unit
Surgical Intensive Care Unit/Trauma
Anesthesia/OR
Research
Vascular Service