Tehran University of Medical Sciences

In the Name of God

Islamic Republic of Iran
Ministry of Health and Medical Education
Deputy for Education

Neurovascular Intervention

Degree: Fellowship

Introduction

Neurovascular diseases are among important diseases of the nervous system because of their high mortality and morbidity. These diseases have no prior warning signs and suddenly occur in their severe form and affect patients with severe complications from death to long-term neurological disability. Cerebrovascular accident or stroke, as the most prevalent neurology diseases, are often ischemic and can be prevented. Congenital and acquired cerebral arteriovenous malformations are other important diseases in this respect, including cerebral aneurysms and AVMs. These two disorders can be presented with subarachnoid hemorrhage, which is an unfavorable complication and entails death, coma or neurological disabilities. Treatments for cerebrovascular diseases were primarily surgery that requires serious and costly invasive procedures on vessels. These interventions are intracranial or extracranial, and are often associated with prolonged hospitalization in ICU. Furthermore, intracranial surgeries are especially associated with high neurologic complications and many patients experience major and long-term illness after surgery. Although some patients do not have any other treatment choices rather than surgery, nowadays highly effective and minimally invasive techniques have been introduced based on intravascular interventions, which cause less morbidity, cost less, and lead to faster discharges in addition to the positive treatment outcomes. The main objective of this course is training specialists in the field of neurovascular interventions.

Definition and Duration of Training Program:

Neurovascular intervention fellowship is a clinical fellowship derived from the subspecialties of neurology, neurosurgery and radiology, whose graduates are involved in prevention, treatment and care of patients with neurovascular diseases, and they will offer their knowledge and skills in education, research and healthcare service to the society.
Duration of this fellowship is 18 months

Aims:

In next 10 years, after establishing this course in IRI and through compliance with educational standards, research production and providing medical services to the people will rank among the top in the region.
2- To train specialists who are up-to-date, competent, responsible, and sensitive to the health of individuals and society in the specialized field of neurovascular intervention for providing the society with their expertise in the areas of prevention, diagnosis, education, and research.

Expected Competencies at the End of the Program

General Competencies*

Specific Competencies and Skills

At the end of the program learners will be competent in the following Procedural Skills (Diagnostic-Therapeutic Measures):

Diagnostic carotid and vertebrobasilar arteriography
Extracranial carotid stenting
Diagnostic angiography of spinal cord
Intraarterial thrombolysis & thrombectomy
Brain Aneurysm endovascular treatment
Endovascular treatment of vascular malformation and fistural of hand and neck and spinal cord and column

Educational Strategies, Methods and Techniques*

Student Assessment

A. Assessment methods:

Written
Oral
OSCE
DOPS
Paper assessment
Portfolio assessment

B. Periods of assessment:

3 times: 6th and 9th month and at the end of the course
Paper assessment every 6 months
Written and oral exam every 6 months
Portfolio at the end of the course
OSCE at the end of the course

Ethical Considerations*

*Note: The related document(s) can be found at http://hcmep.behdasht.gov.ir/.

Overall structure of the course:

Ward, unit, or education setting	Syllabus- Measures	Duration (month)
Clinic	Outpatient visit - Selecting, filing and admission- Following the specialized counseling of patients- performing outpatient procedures - training the lower ranks - Responding to requested specialized counseling and other measures as scheduled by the ward	During the course once a week
Neurointervention ward	Inpatient - caring of patients - stabilizing patients admitted to the ward (Neurology and Neurosurgery)- performing diagnostic therapeutic procedures - training the lower ranks and other measures as scheduled by the ward	During the course according to the program of ward
Multilateral imaging	MRA, CTA and angiography	During the course
Intervention	Experiencing and performing above mentioned relevant treatment procedures	During the course
(Optional) Neurology	The neurologic examination - stroke - CV	1 month
(Optional) Neurosurgery	Specialty operating room - Cerebrovascular and spinal cord surgery	1 month
(Optional) Radiology	Understanding the principles of cerebrovascular imaging	
Modeling and Animal Lab[1]		

Explanations:

Optional wards are determined according to primary specialty. For example, a neurosurgeon should spend one month in the neurology ward and one month in the radiology ward.

The content of the rotational wards is determined based on the primary specialty.

Choosing two out of three rotational wards is mandatory

1. Not mandatory

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