Post-doctoral stroke fellowship curriculum

1.Introduction

This curriculum is designed for training a graduate in Neurology in diagnosing and managing stroke and other cerebrovascular disorders. This one year programme encompasses an overall hands on training in management of acute stroke,its complications as well as an exposure to surgical and interventional management for prevention and treatment of stroke and other cerebrovascular conditions.

2.Goals and objectives

The fellow is imparted training to recognize high risk TIA and acute strokes who require emergent treatment. They are also trained at selecting candidates for thrombolytic therapy/mechanical revascularisation based on clinical and imaging findings and monitoring of patient for any complications. Fellow should also be able to recognize cerebral and cerebellar hemorrhage, malignant hemispheric strokes and cerebellar strokes who may benefit from surgical treatment . He should be able to recognize patients requiring surgical/endovascular revascularization for stroke prevention. In addition, fellow gets stroke clinic postings where outpatient evaluation and long term followup is possible. Also fellow gets training in performance and interpretation of transcranial Doppler including long term microembolic signal detection. He also gets exposure to multidisciplinary rehabilitation of acute and chronic stroke patients. During this time fellow should also be able to plan and do atleast 2 research projects in the field of cerebrovascular diseases.

3.Definitions

A trainer of the fellow is the program director or faculty appointed by program director who has adequate skills, knowledge and experience in the subspeciality of Stroke. A Stroke specialist is a neurologist who has had a fellowship training in Stroke(for a minimum 1 year) and/or for whom stroke comprises more than 60% of his/her clinical and research activities.

Detailed account of the subjects to be learned during the training programme is given below.

4.Content of the subjects to be learned.

I.Basic sciences of cerebrovascular diseases.

A.Neuroanatomy and vascular anatomy, Pathogenesis of atherosclerosis, dissection, other cerebrovascular diseases like aneurysm, AVM, moya moya vasculopathy, intracerebral bleed.

B.Knowledge of vascular risk factors-Diabetes, hypertension, dyslipidemia, cardiovascular diseases and arrhythmias and their management.

C.Pharmacology of drugs ,their indications and the rational use.

D.Principles of neurosonogram -Transcranial Doppler -basic physics, indications, use in microembolic signal detection and during thrombolytic therapy to assess vessel recanalisation.

E.Rationale and mechanism of surgical and endovascular treatment in acute stroke and for prevention of stroke.

II.Clinical sciences

A.Epidemiology of stroke and other cerebrovascular diseases

B.Genetics and epigenetics of stroke

C.Diagnosis of stroke and distinguishing from stroke mimics, recognizing high risk TIA and minor strokes and triaging them in outpatient setting for rapid evaluation.

D. Selection of patients for acute stroke therapies-intravenous/intraarterial or mechanical thrombolysis based on clinical picture and imaging.

E. Acute critical care management of stroke, including maintaining perfusion to prevent deterioration, management of raised ICP and selection of patients for decompressive surgery.

F.Acute management of intracerebral hemorrhage, including BP management, selecting patients for surgical evacuation.

G. Selection of patients and pre and postoperative management of carotid revascularisation

H. Initiating and planning multidisciplinary rehabilitation of acute and chronic stroke patients.

I. Planning secondary prevention strategies and modification of risk factors

J. Selection of patients for intracranial stenting and moyamoya revascularization.

III. Neuroimaging

A. Interpretation of CT,CT angiogram and CT perfusion

B .Interpretation of MRI,MR angiogram, MR perfusion and plaque imaging

C. Cerebrovascular reactivity studies

D. Conventional angiogram techniques and interpretation

IV. Transcranial Doppler

Principles and physics, indications, utility in microembolic signal detection and assessing vessel recanalisation in acute stroke during reperfusion therapies

V. Research

Short term prospective study to be conducted during the course period with an aim to publish it in an indexed journal of repute in the field of cerebrovascular diseases/present findings in national/international conferences.