Target Blood Pressure in Neurosurgical Patients: How high and how low we should go?

Content outline:

General concepts

1. Lower limit of of mean arterial pressure(MAP) in neurosurgical patients: current concepts
2. Pathophysiology of systemic hypertension as per current literature
3. Pathophysiology of systemic cardiovascular and pulmonary events as current literature
4. Status of cerebral autoregulation and blood brain integrity following an intracranial event
5. Management of systemic hypertension: Choice of pharmacological agents as per current concepts
6. Reasons for avoiding vasodilator agents to treat systemic hypertension
7. Role of routine cardiac evaluation in a patient with acute intracranial pathology
8. Role of perioperative prophylactic beta blockers to treat systemic hypertension and cardiac pathology in a patient with intracranial pathology
9. Laboratory monitoring of hypertensive response following intracranial event as per current evidence.

Target blood Traumatic Brain Injury (TBI)

1. Definition of hypotension in TBI and why the lower limit of hypotension was increased from 90 to 110 mm Hg as per 2016 Brain Trauma Foundation(BTF) guidelines
2. Target cerebral perfusion Pressure (CPP) as per recent BTF guidelines and why the target CPP is narrowed in recent BTF guidelines. Definition of lower and upper limit of CPP in TBI.
3. Method of calculation of target MAP in the absence of ICP monitor for an emergent TBI patient coming craniotomy. Discussion about lower and upper level of MAP.
4. Harmful effects of the rise and fall of CPP above and below this narrow range of CPP.

Target BP in acute ischemic stroke(AIS)

1. Review of literature of target systolic BP range prior to reperfusion therapy in AIS.

Target BP in spontaneous intracerebral hemorrhage

1. Review of INTERACT 2 and ATTACH2 trials.
2. Target BP based on above 2 trials as per neurological outcome

Target BP in aneurysmal subarachnoid hemorrhage(aSAH)

1. Historical target for BP in aSAH.
2. Review of Neurocritical care society consensus statement 2011 on target BP for patients presenting clipping, coiling or endovascular flow diversion for techniques.
3. Review of the American Stroke Association(ASA) of the American Heart Association(AHA) guidelines for aSAH blood pressure targets.
4. Extrapolation of results of spontaneous ICH trials to spontaneous aSAH.
5. Target BP during application of a temporary clip.

6. Target BP during induced hypotension for permanent clip.
7. Target BP for induced hypertension for DCI. after aSAH.

Target BP for Deep Brain stimulation electrode implantation

1. Target BP range during permanent macroelectrode and microelectrode implantation
2. Reasons for this blood pressure target as per current evidence
3. Which antihypertensive agents should be avoided during permanent Deep Brain Stimulation electrodes ?Why?

Biography: The author Stanlies D'Souza MD, FRCA, FCARCSI is an Associate Professor in Anesthesiology at the University of Massachusetts Medical School (UMMS) and at the Tufts University School of Medicine, USA. He is also the chief of neuroanesthesiology division at UMMS, Baystate Medical Center, MA, USA.

In addition he has been appointed as national neuroanesthesia committee member of the American Society of Anesthesiologists (ASA). He is active at the ASA with multiple problem based learning discussions (PBLD) sessions and poster presentations over the past 9 years. He is also moderating poster sessions at the ASA. Most importantly his article on "Aneurysmal Subarachnoid Hemorrhage" published in the Journal of Neurosurgical Anesthesia is the most viewed article since its publication in 2015. This is the only neurosurgical anesthesia journal in the world and the official journal of neurosurgical anesthesia societies of several countries across the world.