



Department of Anesthesia Techniques

Title of the lecture:- hypotensive

technique

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## Hypotensive technique in anesthesia

What is the hypotensive technique ?

- Its strategy of controlled lowering of blood pressure of the patient by the anesthesiologist
- It reduced to 30% of MAP of the patient
- MAP is reduced either by reduce C.O.P or SVR , cardiac output or Systemic vascular resistance .

- **Methods to reduce C.O.P :**

Reduce preload by nitroglycerine to reduce the preload

Reduce the cardiac contractility using inhalational agents

Decrease in cardiac contractility using inhalational agents or Beta blocker

Reduce heart rate using inhalational agents or beta blockers.

- **Methods of reduce systemic vascular resistance:**

Blockade of alpha adrenergic receptors by labetalol or phentolamine.

Relaxation of vascular smooth muscles like direct vasodilators(nitroprusside) or inhalational agents



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**Why we use this technique ?**

**In order to make field clear to surgeon , to reduce blood loss ,reduce needing for blood transfusion postoperative ,reduce chance of electro cauterization**

**When we use this technique ?**

- **Neurosurgical operations**
- **Fasciomaxillary operations**
- **Head & neck operations**
- **Hip replacement**
- **Lambenectomy operations**

**Which group of patients are suitable for hypotensive technique ?**

- **ASA1 &ASA2 American association anesthesia classification group 1 ( that has no chronic diseases ) or group 2 (that has controlled chronic diseases ) .**

**What are the effects of hypotensive technique on body systems ?**

**It may cause hypo perfusion to the vital organs : it reduce**

- **C..O.P & reduce after& preload , ischemic disorders**
- **CBF , ischemic disorders**
- **GFR & renal system perfusion**



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- hepatic blood flow & metabolism of drugs .
- hypoxic pulmonary vasoconstriction response because of use vasodilators ,all cause V/Q mismatch .

**What are the risk factors of hypotensive technique ?**

- Patient factor :

Diabetic ,anemic , cardiac , vascular , hepatic , cerebral ,respiratory & renal disease or uncontrolled BP during the technique .

- Anesthetic factor :

Un experience to the technique & its complications &In ability to provide adequate monitoring to the technique .

**What are the hypotensive technique ?**

- Physiological :

• positional , head up ,head & shoulder up , sitting position ,each 2.5 cm elevation reduce 2 mmHg of cerebral perfusion .

- Mechanical ventilator :

PEEP ( reduce venous return ) , prolong inspiratory time I:E ratio , high RR ( hyperventilation)

- Pharmacological :

• Inhalational : by negative inotropic effect vasodilator Sevoflurane > enuoflurane > isoflurane



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- **Direct vasodilator : Na nitroprussid & nitroglycerine**
- **Beta adrenergic antagonist ( beta blocker )**
- **Ca channel blocker**

**What are anesthetic management ?**

- **Pre-operative assessment**
- **Premedication with Zylocaine , benzodiazepine , Metoprolol ,opioid ( stress free induction ) .**
- **Large bore cannula away from site of operations**
- **Deep anesthesia induction**
- **Full monitoring**
- **Vital signs monitoring with calculate input & output , temperature, evaluate blood less .**
- **Blood loss should replace by equal amount colloid or 2-3 times by crystalloid .**

**THANK YOU**