Hypertension

- Scott Provost, MD

Blood pressure

- Normal <130 / 85
- Hypertension: > 140 / 90
- Severe Hypertension: > 180 / 110

Uncontrolled hypertension:

- Accelerated atherosclerosis
- Myocardial infarction
- Congestive heart failure
- Stroke
- Renal failure
- Peripheral occlusive disease
- Aortic dissection

Pathophysiology

- Essential (85%)
- Secondary
  - Renal disease, pregnancy, estrogen tx
  - Pain, anxiety, hypercarbia, hypoxia

Physiologic changes

- Left ventricular hypertrophy
- Diastolic dysfunction
- Relative hypovolemia
- Altered autoregulation
- Renin-Angiotensin-Aldosterone alteration

Preoperative Considerations

- H&P: signs & symptoms of end organ damage
- CP, pulmonary rales, S3, headache
- EKG: ischemia, LVH, conduction
- Renal function: creatinine
- Electrolytes: diuretic therapy

How high is too high?

- Urgency of surgery
- Type of surgery
- Comorbid disease
- End organ dysfunction

Preoperative Considerations

- Continue antihypertensive therapy DOS
- Ideally, elective surgery once rendered normotensive
- Anxiolytic medication

Intraoperative Goals

- Maintain appropriate stable blood pressure
  - Autoregulation may be altered
- Avoid tachycardia

Intraoperative Monitors

- Noninvasive blood pressure monitoring
- EKG
- Urinary output
- Intraarterial blood pressure monitoring

Induction

- Anticipate hypotension with anesthesia
- NMB: avoid pancuronium
- Exaggerated hypertensive response to laryngoscopy
  - opioids, lidocaine, esmolol

Maintenance

- No technique shown to be better than others
- Volatile, balanced, TIVA
- Maintain hemodynamic goals

Intraoperative hypertension

- Investigate cause
- Deepen anesthesia
- Opioids
- Beta blockers: labetalol
- CCB: nicardapine
- Nitroglycerine, nitroprusside
- Hydralazine***

Postoperative Hypertension

- Go see patient; H&P
- Correct contributing causes
  - pain, anxiety, bladder distention, volume overload, hypercarbia
- Labetalol, nicardapine,