

clinical - final - CVS ✨

- left coronary artery : from left cuspid , divided into circumflex and LAD , &right coronary artery from right cuspid .they are covered by fat hard to locate.
- bypass is after the stenosis to supply them with blood .
- MANAGEMENT : Indication For Surgery • Preoperative Evaluation • Conduits decision • Operation Decision • ERAS .**
- Indication For Surgery** : Anomalies of Coronary arteries , Complications of PTCA , MI& left coronary & Triple vessel disease with DM and decreased EF .
- Class of Recommendation: class 1a is recommended (drug a better than drug b) , class 2a to class 3 are weak , class 4 is harm= mortality.
- Revascularization Improves Survival in SIHD , like class 1 B-R(ideal moderate) for left ventricular dysfunction < 35% , if it is above 35%-50% then use class 2 B-NR.
- class 1 CABG used for left main artery stenosis , class 2 PCI improve survival .
- Multivessel CAD &Stenosis in the proximal LAD **no need CABG** , class 2b no benefit .
- CABG & PCI are recommended in diabetes .
- CABG has better long outcomes than stenting .
- Heart Team should consider: Coronary Anatomy, Comorbidities(Diabetes &Frailty **مشاشه**) , Procedural Factors(Access site, PCI risk) , Patient Factors (preferance) .
- (STS) and EURO II risk score evaluate patient risk (Class 1) : Reoperation, Deep Sternal Wound Infections , stroke , death.
- Cirrhosis ,Frailty , Malnutrition are risk factors too.
- Preoperative Evaluation** : check for liver , kidney , thyroid , infections & carotids before, then stop these drugs before days : Clopidogrel & Ticagrelor , those before hours Eptifibatide & Tirofiban& Abciximab , don't stop aspirin ,, beta blockers reduce mortality .
- share Decision with patient& family , deal with them.
- operation level is : Elective(stable heart) , Urgent (minimize hospitalization), Emergency (instability).
- Conduits decision** : could be arterial (LIMA , radial artery) , venous (GSV) , artery is better than vein but they prefer vein cuz surgeon can test it in operation and take more of it if he find leakage . mixed Conduits are common .
- radial artery is preferable , easy to get , supply is replaced by ulnar artery .
- LIMA is for LAD (Class 1) , we also connect RIMA to improve long term outcomes .
- to adjust vein , put it opposite cuz of valves existence.
- Operation Decision** : Conduits combination & ON Pump Vs OFF Pump .
- ERAS** : early recovery after surgery , minimize hospitalization to reduce infections risk .
- sternotomy : cut sternum to reach the heart , put wax on bone to reduce bone infections .
- then cut thymus , heart full of fat , then get Conduits >> anastomosis .
- heart lung machine : canula in aorta + canula in venous side , then stop heart by potassium .
- off - pump = Octopus Device to keep heart in place , Star fish Device to stop blood flow .
- aspirin and ticagrelor or clopidogrel for 1 year (Class 2b) in off pump operations .
- beta blockers= no effect on stable patients, but a must after CABG ,avoid hypoglycemia .

HYPERTENSION

- hypertension , most common 30% , factors affecting : HR , constriction & dilation & fluid volume .
- diagnosis : measure BP in both arms in sitting position . avoid caffeine , smoke , ensure emptied bladder , Position middle of cuff on patient's upper arm at mid-sternum (right atrium). use average 2 readings , 2 min it between .
- 95% primary hypertension for unknown cause, secondary hypertension is specific cause .
- risk factor : male gender , smoking , salt intake , DM , alcohol ,family history , (lifestyle).
- African Americans are more hypertensive .
- 120-139 prehypertensive , 140-159 stage 1 hypertension , >160 stage 2.
- White Coat Hypertension : in office , not need treatment , good prognoses .
- Masked Hypertension : at home , need anti-hypertensive drugs , dangerous.
- End organ damage involves: Heart Brain Kidney Eyes .
- hypertension cause : heart : hypertrophy , dissection , aneurysm , failure . CNS (stroke), kidney (Nephrosclerosis) , eye “retinal bleeding”.
- treatment resistance : in office >130/80 , ¾ drugs including diuretics.
- pseudo resistance : like white coat syndrome .
- most common cause of secondary hypertension : renal disease , then sleep apnea , drugs
- secondary hypertension : <30 or >50 old , Differential BP between arm and leg , Hypokalemia, Epigastric bruit .
- renal disease Muti factors : Na/water imbalance , less vasodilators , dialysis/ transplant.
- RENOVASCULAR HTN causes “90%Atherosclerosis , 25%Fibromuscular dysplasia”others “Takayasu’s arteritis , stenosis , dissection ”.
- less BP > RAA > Ang2 = constriction > aldosterone “Na + water retention ” > increase BP > edema .
- Azotemia induced by ACEI & Unilateral small kidney= RENOVASCULAR HTN lab.
- CT & MRA & Renal Angiography & Duplex& Captopril renography = HTN scan .
- FIBROMUSCULAR DYSPLASIA : young female , 90% Medial "distal RA ” , treat : PTCA .
- ATHEROSCLEROTIC RAS IN OLDER MEN , treat : stent .
- PRIMARY HYPERALDOSTERONISM: hyperplasia 66% , adenoma 33% ,clinically :
Hypokalemia.
- >20 Aldosterone / Plasma Renin then imaging CT , Tumor removal ,spironolactone response .
- OBSTRUCTIVE SLEEP APNEA : obese , Sleep studies, treat : weight loss , rarely surgical .
- PHEOCHROMOCYTOMA : Tumor containing chromaffin cells , Younge woman , headache ,anxiety “spells” , **tyramine**-containing foods . screening : metanephrine in urine , confirming : **MIBG** , treat : Tumor removal , don't use beta blockers , use alpha blockers .
- CUSHING’S SYNDROME : high cortisol , central obesity , pituitary or adrenal adenoma , Imaging CT/MRI head, treat: Tumor removal“Transsphenoidal resection , adrenalectomy
- COARCTATION OF AORTA : asymptomatic , mortality if untreated , male , Differential systolic BP arms vs legs , Surgical or **stent** .
- HYPERTENSION treatment : lifestyle modification , DASH Diet , Diuretic or CCB often good choice , but not ACEI & ARBs they cause hyperkalemia .
- DM :Consider ACEI or ARBs in presence of albuminuria .
- Hypertension and heart failure with preserved ejection factor : ACEI or ARBs .
- next step in your evaluation after BP measurement : CT .**
- K=2.8meq = Hypokalemia , high BP : PRIMARY HYPERALDOSTERONISM. next step : aldosterone labs .**

- female + headache + hypertension+ episodes: PHEOCHROMOCYTOMA , confirm :
metanephrine level + imaging .
- old man + hypertension + epigastric bruit : renal stenosis “atherosclerosis” , CT scan or
catheter .
- hypertension , old , chest pain , different BP between two arms = dissection , confirm :
echo or CT .