

## Cardiovascular System Disorders

| Diagnostic Test                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Adjunctive Management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Medication                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| <b>A. Laboratory test</b> <ul style="list-style-type: none"> <li>- Serum Electrolytes</li> <li>- ESR</li> <li>- C-reactive protein</li> <li>- Blood coagulation test               <ol style="list-style-type: none"> <li>1. PTT- most significant if on heparin</li> <li>2. PT-most significant if on warfarin</li> <li>3. INR</li> </ol> </li> <li>- BUN &amp; Creatinine- increase in MI,CHF, Cardiomyopathy</li> <li>- Total serum cholesterol               <ol style="list-style-type: none"> <li>1. LDL</li> <li>2. HDL</li> <li>3. Triglycerides</li> </ol> </li> <li>- BNP- indicator for diagnosing HF (Critical value- &gt;than 100pg/ml)</li> <li>- Enzymes test indicates death of myocardial muscle, heart attack               <ol style="list-style-type: none"> <li>1. CK-MB within 4 to 6 hr following Mi &amp; remains elevated from 24 to 72 hr.</li> <li>2. Troponin- gold standard in diagnosing MI. It remains elevated fro 2 to 3 weeks following the event (NV &lt;than 0.2ng/dl)</li> <li>3. Myoglobin- rises in early in response to tissue injury within the ist 2 hrs. Declines after 7 hours. (more present in skeletal)</li> </ol> </li> </ul> | <b>A. Cardioversion</b> <ul style="list-style-type: none"> <li>- Synchronized- time to coincide with the client's own cardiac cycle.</li> </ul> <b>B. Defibrillation</b> <ul style="list-style-type: none"> <li>- Used for VF or pulseless VT</li> <li>- Unsynchronized</li> <li>- Not effective for treatment of asystole</li> </ul> <b>C. Pacemaker</b> <ol style="list-style-type: none"> <li>1. Permanent pacemakers ( subcutaneous)               <ul style="list-style-type: none"> <li>- Observe for hiccups- signs of accidental dislodgement</li> </ul> </li> <li>2. Temporary pacemaker (Transvenous)</li> <li>3. Settings:               <ul style="list-style-type: none"> <li>- Ventricular demand</li> <li>- Ventricular fixed</li> <li>- Dual chamber</li> <li>- Atrial demand</li> <li>- Variable rate</li> </ul> </li> </ol> | <b>A. Antihypertensives</b> <ol style="list-style-type: none"> <li>1. Angiotensin-Converting Enzymes (ACE) Inhibitors               <ul style="list-style-type: none"> <li>- Captopril</li> <li>- Enalapril</li> <li>- Enalaprilat (IV)</li> <li>- Fosinopril</li> <li>- Lisinopril</li> </ul> </li> <li>2. Angiotensin II receptor blockers (ARBs)               <ul style="list-style-type: none"> <li>- Losartan</li> <li>- Valsartan</li> <li>- Irbesartan</li> </ul> </li> <li>3. Calcium-Channel blockers               <ul style="list-style-type: none"> <li>- Nifedipne</li> <li>- Verapamil</li> <li>- Diltiazem</li> <li>- Amlodipine</li> </ul> </li> <li>4. Alpha Adrenergic Blockers (sympatholytics)               <ul style="list-style-type: none"> <li>- Prazosin</li> <li>- Doxazosin mesylate</li> </ul> </li> <li>5. Centrally Acting Alpha2 Agonist               <ul style="list-style-type: none"> <li>- Clonidine</li> <li>- Guanfacine HCl</li> <li>- Methyldopa</li> </ul> </li> <li>6. Beta Adrenergic Blockers (sympatholytics)               <ol style="list-style-type: none"> <li>a. Cardioselective Beta                   <ul style="list-style-type: none"> <li>- Metoprolol</li> <li>- Atenolol</li> <li>- Metoprolol succinate</li> </ul> </li> <li>b. Nonselective (Beta1 &amp; Beta2)                   <ul style="list-style-type: none"> <li>- Propranolol</li> <li>- Nadolol</li> <li>- Labetalol</li> </ul> </li> </ol> </li> <li>7. Vasodilators               <ul style="list-style-type: none"> <li>- Nitroglycerin</li> <li>- Enalaprilat</li> <li>- Nitroprusside</li> <li>- Hydralazine</li> </ul> </li> </ol> |

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| <p><b>B. ECG</b></p> <ul style="list-style-type: none"> <li>- T-wave inversion— Ischemia</li> <li>- ST-segment elevation – injury</li> <li>- Q-Wave enlargement —infarction</li> </ul> <p><b>C. Cardiac Catherization</b></p> <ul style="list-style-type: none"> <li>- Coronary Angioplasty</li> <li>- Coronary stent</li> </ul> <p><b>D. Transesophageal echocardiogram (TEE)</b></p> <ul style="list-style-type: none"> <li>- Visualize structures &amp; function of the heart.</li> <li>- Used for diagnosis of HF &amp; murmurs</li> </ul> |  | <p><b>B. Cardiac Glycosides</b></p> <ul style="list-style-type: none"> <li>- Digoxin</li> <li>- Watch for toxicity</li> <li>- Hold if HR is &gt; 60 (adult), &gt; 70 (child), &gt;90 (infant)</li> </ul> <p><b>C. Antianginal</b></p> <ul style="list-style-type: none"> <li>- Organic Nitrates <ul style="list-style-type: none"> <li>-Sublingual tablet</li> <li>-Sustained-release tablet</li> </ul> </li> <li>- Transdermal ointment</li> <li>- Transderm patch</li> </ul> <p><b>D. Antidysrhythmic agents</b></p> <ol style="list-style-type: none"> <li>1. Adenosine -convert SVT To sinus</li> <li>2. Amiodarone- VF, unstable VTACH</li> <li>3. Atropine- Bradycardia</li> </ol> <p><b>E Antilipemic medication</b></p> <ul style="list-style-type: none"> <li>- Colestid</li> <li>- Welchol</li> <li>- Tricor</li> <li>- Lopid</li> </ul> <p><b>F Statin medication</b></p> <ul style="list-style-type: none"> <li>- Atorvastatin</li> <li>- Simvastatin</li> <li>- Lovastatin</li> </ul> |
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| Cardiovascular Disorders                                                                                                                                                                                                                                                                                                                | Valvular Disorders                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Peripheral Vascular Disorders                                                                                                                                                                                                                                                                                                                                                                                                          |
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| <p><b>A. Angina</b></p> <ul style="list-style-type: none"> <li>- Chronic stable angina</li> <li>- Acute coronary syndrome</li> <li>- Types of angina <ol style="list-style-type: none"> <li>a. Stable (exertional) angina</li> <li>b. Unstable (preinfarction) angina</li> <li>c. Variant (Prinzmetal's ) angina</li> </ol> </li> </ul> | <p><b>A. Right-sided heart failure</b></p> <ul style="list-style-type: none"> <li>- Mitral stenosis</li> <li>- Mitral regurgitation</li> <li>- Tricuspid stenosis</li> </ul> <p><b>B. Left-sided heart failure</b></p> <ul style="list-style-type: none"> <li>- Aortic stenosis</li> <li>- Aortic regurgitation</li> </ul> <p><b>Management</b></p> <ol style="list-style-type: none"> <li>1. Valvuloplasty – watch for systemic emboli</li> <li>2. Valve replacement <ol style="list-style-type: none"> <li>a. Mechanical Require lifelong anticoagulants-</li> </ol> </li> </ol> | <p><b>A. Peripheral arterial disease</b></p> <ul style="list-style-type: none"> <li>- Intermittent claudication</li> <li>- Shiny skin with hair loss &amp; thickened toenails</li> <li>- Necrotic ulcers -no edema</li> <li>- Tingling &amp; numbness of the toes</li> <li>- Cool extremities with poor pulses</li> <li>- <b>Surgical treatment</b> <ol style="list-style-type: none"> <li>1. Femoral popliteal</li> </ol> </li> </ul> |

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| <p><b>B. Myocardial Infarction</b></p> <ul style="list-style-type: none"> <li>- “Time is muscle”</li> <li>- 90 minutes from ED door to needle door”</li> <li>- STEMI</li> <li>- NSTEMI</li> </ul> <p><b>C. Heart Failure</b></p> <ul style="list-style-type: none"> <li>- Left-sided heart failure = pulmonary congestion</li> <li>- Right-sided heart failure = Systemic congestion</li> </ul> | <p>warfarin</p> <p><b>b. Biologic</b> -require prophylactic anticoagulants for 3 months</p> <p><b>C. Aortic aneurysm</b></p> <ul style="list-style-type: none"> <li>- Monitored until above 5 cm when the rate of rupture increases &amp; surgery is needed.</li> </ul> <p><b>D. Hypertension</b></p> <ul style="list-style-type: none"> <li>- “silent killer”</li> </ul> <ol style="list-style-type: none"> <li>1. Primary hypertension</li> <li>2. Secondary hypertension</li> </ol> | <p>bypass</p> <ol style="list-style-type: none"> <li>2. Angioplasty or stenting</li> </ol> <p><b>B. Peripheral venous disease</b></p> <ul style="list-style-type: none"> <li>- Stasis dermatitis ( brown discoloration)</li> <li>- Edema</li> <li>- Stasis ulcer9typically found around ankles)</li> </ul> <p><b>C. Venous thromboembolism</b></p> <ul style="list-style-type: none"> <li>- Edema of affected l</li> </ul> |
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