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ANAESTHESIA TECHNOLOGY
3rd YEAR***

PAPER 2: PRINCIPLES OF ANAESTHESIA II

TOPIC: ANGINA PECTORIS



- *Heberden in 1769 gave the first description of typical angina pectoris.*
- *It is substernal pain or heaviness radiating to both arms or ulnar border of left arm, jaw, teeth, occipital region or epigastrium*
- *Variation to the above may be gas in the substernal region or pain in the areas of radiation without substernal pain*
- *Sometimes there may be breathlessness or fatigue due to low cardiac output*

Types:

- *Stable angina*
- *Nocturnal angina*
- *Unstable angina*
- *Prinzmetal angina*
- *Post infraction angina*



Stable Angina:

- *It occurs with known physical effort and is relieved with rest and nitrates*
- *Cold, weather, smoking, emotional upset, high altitude, sexual intercourse and straining at stools can also aggravate it*

Nocturnal Angina:

- *Angina appears in the middle of the night due to left ventricular failure which may be precipitated by dreams causing release of catecholamines a fully urinary bladder or transient hypoglycemia.*

Unstable Angina:

- *This is also called preinfraction angina as 20% of these patient develop myocardial infraction within 4 months.*



- *The following types of anginal pains are called unstable angina:*
 - a) *Recent Angina (less than 60 days)*
 - b) *Stable Angina in which symptoms are more severe in intensity, frequency and duration*
 - c) *Angina at rest*
 - d) *Angina following myocardial infraction (within days or week)*

Prinzmetal Angina:

- *This was described by the early hours of morning associated with ST elevation on ECG*
- *It responds to nifedipine or nitrates as it is caused by increased alpha adrenergic activity during early hours of morning or due to platelet aggregation*
- *Though coronary arteries can be normal on angiography in 50% of patients there may be associated coronary artery obstructive disease*



- *Beta blockers may aggravate the spasm and hence are contraindicated*

Post Infraction Angina:

- *Some patients with myocardial infarction develop angina 2 days to 8 weeks following the infarction*
- *Most of them have multivessel disease and residual myocardial ischemia*
- *They require early coronary angiography and appropriate treatment.*

Assessment of chest pain:

Grade:

I-Angina only on strenuous or prolonged exertion

II-Angina climbing two flights of stairs

III-Angina walking one block on the level

IV-Angina at rest



Etiology:

Supply-Demand mismatch

Factors that decrease supply:

Coronary vessel disorders:

- *Atherosclerosis*
- *Arterial spasm*
- *Coronary Arteritis*

Circulatory disorders:

- *Hypotension*
- *Aortic Stenosis*
- *Aortic insufficiency*

Blood Disorders:

- *Anemia*
- *Hypoxemia*
- *Polycythemia*



Factors that increase demand:

Inceased cardiac output:

- *Exercise*
- *Emotion*
- *Digestion of large meal*
- *Increased myocardial need for oxygen*
- *Damaged myocardium*
- *Myocardial Hypertrophy*

Causes:

- *Smoking*
- *Hypertension*
- *High cholesterol*
- *Diabetes Mellitus*
- *Stress*



Symptoms:

- *Decreased cardiac output*
- *Chest pain*
- *Bradycardia*
- *Dysarrythmias*
- *Excessive sweating*
- *Shortness of breathing*
- *Pulmonary Edema*
- *Decreased urine output*
- *Nausea & Vomitting*
- *Cool, Clammy skin*

Diagnosis:

- *Physical Examination*
- *ECG*
- *Stress Testing*
- *Thallium stress*



- *Holter Monitoring*
- *Echocardiography and doppler study*
- *Coronary Angiogram*

Management:

Life style management:

- *Quit smoking*
- *Manage stress*
- *Eating healthy*
- *Physical activity*

Pharmacological management:

- *Opioids analgesics*
- *Antiplatelet*
- *Beta blockers*
- *Vasodilators*
- *Calcium channel blockers*



Surgical Management:

- *Cardiac catheterization*
- *Revascularization*
- *Nutritional management*
- *Rehabilitation*
- *CABG*



THANK YOU