**CARDIOVASCULAR BLOCK**

Pathology lectures and Practicals: 6 lectures and 2 practicals

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**Lectures one and two: Ischaemic heart diseases: angina and myocardial infarction.**

***Objectives:***

At the end of these two lectures, the student should:

1. Understand the pathogenesis and clinical consequences of atherosclerosis.
2. Be able to discuss pathology and complications of ischaemic heart diseases with special emphasis on myocardial infarction.
3. Know how lifestyle modifications can reduce the risk of ischaemic heart disease.

***Key principles to be discussed:***

1. Risk factors of atherosclerosis.
2. Pathogenesis of the fibrolipid atherosclerotic plaque.
3. Clinical complications of atherosclerosis.
4. Commonest sites for the clinically significant coronary atherosclerosis.
5. Macroscopic and microscopic changes in myocardial infarction.
6. Biochemical markers of myocardial infarction.
7. Complications of myocardial infarction: immediate and late.

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**Pathology of hypertension (lecture 3):**

***Objectives:***

At the end of this lecture, the students should be able to:

1. Know the aetiology, risk factors and complications of hypertension, so as to be able to identify patient risk factors amenable to treatment by lifestyle modification, and to investigate patients appropriately for causes of secondary hypertension.

***Key principles to be discussed:***

1. Raised systemic blood pressure is a major cause of morbidity and mortality.
2. Hypertension can cause or contribute to: atherosclerosis, left ventricular hypertrophy, chronic renal failure, cerebrovascular disease and retinopathy.
3. Normal values for blood pressure.
4. Causes of secondary hypertension.
5. Genetic and environmental factors contributing to the aetiology of essential hypertension.
6. Pathology of blood vessels (blood vessels changes) in both primary and secondary hypertension.

**Pathology of thromboembolism and vasculitis (2 lectures):**

***Objectives:***

At the end of these two lectures, the students should be able to:

1. Understand the basic pathology of thrombogenesis and the risk factors for development of deep vein thrombosis.
2. Know the types of embolus than can occur and the pathology of pulmonary embolism.
3. Know the common causes of vasculitis with special emphasis on the clinic-pathological features and mechanism of:
4. Giant cell arteritis.
5. Polyarteritis nodosa.
6. Wegener's granulomatosis.
7. Cutaneous hypersensitivity vasculitis and Henoch Schonlein purpura.

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***Key principles to be discussed:***

1. Pathological aspects of thrombogenesis: vessel wall abnormality, vascular stasis or turbulent flow and increased blood coagulability.
2. Causes of thrombus and embolism formation.
3. Predisposing factors for deep vein thrombosis.
4. Pathology of pulmonary thrombo-embolism.
5. Brief description of other forms of emboli like: fat embolism, air embolism, atherosclerotic plaque embolism, amniotic fluid embolism, nitrogen embolism and infective endocarditis.
6. Pathology of vasculitis: giant cell arteritis, polyarteritis nodosa, Wegener's granulomatosis, Henoch-Schonlein purpura and cutaneous hypersensitivity vasculitis.

**Pathology of rheumatic fever, endocarditis and heart valves (one lecture):**

***Objectives:***

At the end of this lecture, the students should be able to:

1. Understands the clinicopathological features of rheumatic heart disease which is a major cause of acquired mitral and aortic valve diseases in the Kingdom of Saudi Arabia.
2. Know the pathological causes and pathophysiological consequences of stenosis and incompetence of all the cardiac valves but particularly the mitral and aortic valves.
3. Understands the pathology of infective endocarditis so as to be able to identify patients at risk and when appropriate ensure prophylactic treatment is given.

***Key principles to be discussed:***

1. Pathology and manifestations of rheumatic heart disease as a major cause of valvular diseases in the Middle East and Saudi Arabia.
2. Complications of rheumatic heart disease including atrial fibrillation, valvular and atrial thrombus formation with systemic embolism, cardiac failure and infective endocarditis.
3. Infective endocarditis: predisposing factors, clinical acute and subacute forms, common pathogenic bacteria in IE and complications including valve perforation, thrombosis and septic embolization of the vegetations.
4. Causes and consequences of valvular heart disease with special emphasis on aortic and mitral valve including "floppy or prolapsed" mitral valve.

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***Resources and references for further reading:***

1] Kumar, Cotran and Robbins. Basic Pathology (eight edition), 2008. W.B. Saunders Company.

2] Alan Stevens, James Lowe and Ian Scott. Core Pathology (third edition), 2009. Mobsy (Elsevier).