



“बेटी बचाओ, बेटी पढ़ाओ”

JAYOTI VIDYAPEETH WOMEN'S UNIVERSITY, JAIPUR
FACULTY OF HOMOEOPATHIC SCIENCE

Faculty Name	: JV'n Dr. M.P. Sharma
	Teaching Methodology of physiology
Program	: BHMS 1 st year
Course	: Physiology
Session	: CVS – Arterial blood flow

Academic Day starts with –

- Greeting with saying ‘Namaste’ by joining Hands together following by 2-3 Minutes Happy session, Celebrating birthday of any student of respective class and National Anthem

Lecture Starts with-

- **Review of previous Session-** In previous session as I had discussed about introduction of heart. Now tell me about physiological shunt?
- **Topic to be discussed today-** Today I will discuss about arterial blood flow. I will start this topic from introduction.

Academic Day starts with

Greeting with saying 'Namaste' by joining Hands together following by 2-3 Minutes Happy session, Celebrating birthday of any student of respective class and National Anthem

Lecture Starts with-

Arterial blood flow

Arterial blood pressure is defined as the lateral pressure exerted by the column of blood on wall of arteries. The pressure is exerted when blood flows through the arteries.

- Generally, the term 'blood pressure' refers to arterial blood pressure.
- Arterial blood pressure is expressed in four different terms:
 1. Systolic blood pressure
 2. Diastolic blood pressure
 3. Pulse pressure
 4. Mean arterial blood pressure
- **SYSTOLIC BLOOD PRESSURE**- it is defined as the maximum pressure exerted in the arteries during systole of heart. Normal systolic pressure: 120 mm Hg (110 mm Hg to 140 mm Hg).
- **DIASTOLIC BLOOD PRESSURE** is defined as the minimum pressure exerted in the arteries during diastole of heart. Normal diastolic pressure: 80 mm Hg (60 mm Hg to 80 mm Hg).
- **PULSE PRESSURE**- it is the difference between the systolic pressure and diastolic pressure. Normal pulse pressure: 40 mm Hg (120 – 80 = 40).

- MEAN ARTERIAL BLOOD PRESSURE- it is the average pressure existing in the arteries.

- ✓ It is the diastolic pressure plus one third of pulse pressure.
- ✓ Formula to calculate mean arterial blood pressure: Mean arterial blood pressure = Diastolic pressure + 1/3 of pulse pressure $40 = 80 + = 93.3 \text{ mm Hg}$

- Arterial blood pressure is directly proportional to

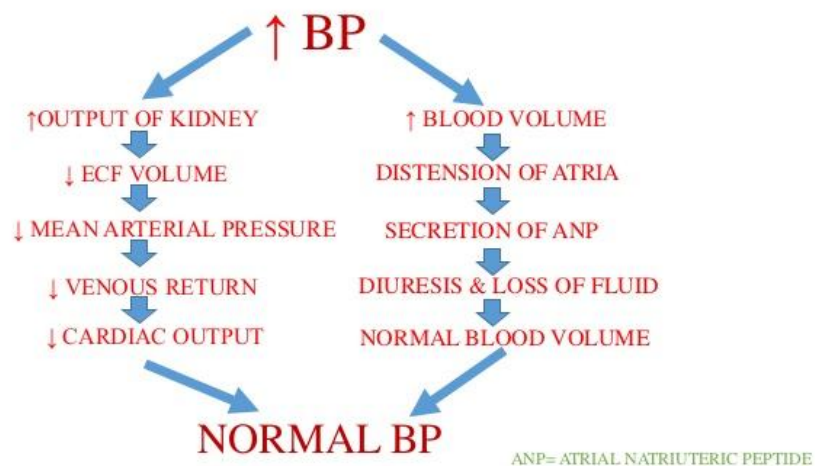
1. Cardiac output
2. Heart rate
3. Peripheral resistance
4. Blood volume
5. Venous return
6. Velocity of blood flow
7. Viscosity of blood

- Arterial blood pressure is inversely proportional to

1. Elasticity of blood vessel
2. Diameter of blood vessel

- Regulation of arterial blood pressure-

- A. Nervous mechanism or short-term regulatory mechanism
- B. Renal mechanism or long-term regulatory mechanism
- C. Hormonal mechanism
- D. Local mechanism.



Applied Physiology

HYPERTENSION- Hypertension is defined as the persistent high blood pressure. Clinically, when the systolic pressure remains elevated above 150 mm Hg and diastolic pressure remains elevated above 90 mm Hg, it is considered as hypertension. If there is increase only in systolic pressure, it is called systolic hypertension.

Types of Hypertension-

1. Primary hypertension or essential hypertension
2. Secondary hypertension.

1. Primary Hypertension or Essential Hypertension

- it is the elevated blood pressure in the absence of any underlying disease. It is also called essential hypertension.
- Arterial blood pressure is increased because of increased peripheral resistance, which occurs due to some unknown cause.
- Primary hypertension is of two types: i. Benign hypertension ii. Malignant hypertension.

2. Secondary Hypertension

- it is the high blood pressure due to some underlying disorders.
- The different forms of secondary hypertension are:
 - i. Cardiovascular hypertension Cardiovascular hypertension is produced due to the cardiovascular disorders such as: a. Atherosclerosis: Hardening of blood vessels due to fat deposition b. Coarctation of aorta: Narrowing of aorta.
 - ii. Endocrine hypertension Endocrine hypertension is developed because of hyperactivity of some endocrine glands: a. Pheochromocytoma: Tumor

- in adrenal medulla, resulting in excess secretion of catecholamines b. Hyperaldosteronism: Excess secretion of aldosterone from adrenal cortex c. Cushing syndrome: Excess secretion of glucocorticoids from adrenal cortex.
- iii. Renal hypertension Renal diseases causing hypertension: a. Stenosis of renal arteries b. Tumor of juxtaglomerular cells, leading to excess production of angiotensin II c. Glomerulonephritis.
- iv. Neurogenic hypertension Nervous disorders producing hypertension: a. Increased intracranial pressure b. Lesion in tractussolitarius c. Sectioning of nerve fibers from carotid sinus.
- v. Hypertension during pregnancy Some pregnant women develop hypertension because of toxemia of pregnancy. Arterial blood pressure is elevated by the low glomerular filtration rate and retention of sodium and water. It may be because of some autoimmune processes during pregnancy or release of some vasoconstrictor agents from placenta or due to the excessive secretion of hormones causing rise in blood pressure. Hypertension is associated with convulsions in eclampsia

Review of previous Session- In previous session as I had discussed about heart introduction . Now tell me about myocardium?

Topic to be discussed today- Today I will discuss about blood pressure. I will start this topic from ancient literature.

RELATION WITH ANCIENT LITERATURE – IN PROCESS

REFERENCE

1. Essentials of Medical Physiology 8th Edition 2019 By Sembulingam
2. Guyton and Hall Textbook of Medical Physiology 12th-Ed
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Review of literature- in process

Suggestions to secure good marks to answer in exam-

Give answer with complete labeled diagrams.

Explain answer with key point answers

Questions to check understanding level of students-

1. what is hypertension?
2. what is the value of normal blood pressure?

Next Topic-Disease related to heart sound

Academic Day ends with-

National song ' VandeMataram'