

**18/mhs07/001**

**Ana 202**

**Pharmacology**

**Question: 1 you will be provided with a video, watch it and use it to describe the heart and its functions.**

**2 write on five different co- genital anomalies of the heart.**

**Answer: Description of the heart**

The heart is a muscle about the size of your fist . it lies to the left of your breast bone or sternum .

The heart is divided into 4 chambers, the top two are called atria and are collection Chambers for blood the bottom two are called ventricles and they receive blood from atria and pump to the lungs and the body. The chambers are separated by valves that control the direction of blood flow .

There are four valves:

- Tricuspid valve
- Pulmonary valve
- Mitral valve
- Aortic valve

Circulation begins at the right part of the heart where blood from the body comes to the right atrium . this blood passes to the right ventricle where it is pumped to the lungs to receive oxygen .once it receives oxygen it flows to the left atrium and then to the left ventricle where it is pumped to the aorta and the rest of the body on the left side of the heart. The tricuspid valve separates the right atrium and right ventricle allowing blood to enter the ventricle but not flow backwards to the atrium. Blood flows through the pulmonic valve to go to the lungs on the left side of the heart. The mitral valve separates the left atrium and left ventricle, blood flows from the left ventricle to the aorta through the aortic valve and the rest of the body. Arteries carry blood with oxygen and nutrients through out the body. Veins take blood back to the heart which pumps it to the lungs to be oxygenated. The heart arteries, coronary arteries provide oxygen and nutrients to the heart muscles. The right coronary artery splits into 2 vessels , one branch supplies blood to the front of the heart and the other delivers to the left side.

An electric system transmits signal throughout the heart to control its pumping. The electrical signal starts in the SA node which is located in the upper portion of the right atrium and is known as the natural pacemaker of the heart. The electrical signal passes down to the lower chambers of the heart by the AV node which controls the signal of the atrium to contract before the ventricles. In the ventricles, pathways carry signals throughout the muscle so the contract the same time to pump blood to the lungs and through the body.

## **Functions of the heart**

- To pump blood for blood vessels, arteries and veins to all part of the body.
- Blood from the body comes to the right atrium and passes through the left ventricle where it is pumped to the lungs to receive oxygen.
- Arteries carry blood with oxygen and other nutrients throughout the body
- Veins take blood back to the heart which pumps it to the lungs to be oxygenated
- Coronary arteries provide oxygen and nutrients to the heart muscles.

## **2 Co Genital Anomalies Of The Heart**

### **1 Hole in the Heart (Septal Defect)**

This means you're born with a hole in the wall, or septum, that separates the left and right sides of your heart. The hole lets blood from the two sides mix.

### **2 Atrial Septal Defect (ASD)**

An ASD is a hole in the wall between the upper chambers, or the right and left atria, of your heart. A hole here lets blood from the left atrium mix with blood in the right atrium.

Some ASDs close on their own. Your doctor may need to repair a medium or large ASD with open-heart surgery or another procedure.

He might seal the hole with a minimally invasive catheter procedure. He inserts a small tube, or catheter, in your blood vessel all the way to your heart. Then he can cover the hole with a variety of devices.

### **3 Ventricular Septal Defect (VSD)**

A VSD is a hole in the part of your septum that separates your heart's lower chambers, or ventricles. If you have a VSD, blood gets pumped back to your lungs instead of to your body.

A small VSD may also close on its own. But if yours is larger, you may need surgery to repair it.

### **4 Complete Atrioventricular Canal Defect (CAVC)**

This is the most serious septal defect. It's when you have a hole in your heart that affects all four chambers.

A CAVC prevents oxygen-rich blood from going to the right places in your body. Your doctor can repair it with patches. But some people need more than one surgery to treat it.

**5 Pulmonary valve stenosis.** This is the most common valve defect in newborns. Babies with severe cases often have strained right ventricles. Your doctor can usually treat it with a catheter

procedure. She will use a catheter, or thin tube, with a balloon on the end to inflate and stretch open the strained valve.