

UBA AMALACHUKWU

18/MHS07/051

PHARMACOLOGY

ANA 202

1. You will be provided with a video, watch it and use it to describe the heart and its functions.

The heart is a muscle about the size of your fist. It lies behind the sternum and left to the breastbone. The inside of the heart is divided into four chambers; the top two chambers are called the atria and are collection chambers for blood, the bottom two chambers are called the ventricles and receive the blood from the atria and pump it to the lungs and the body. The chambers are separated by valves which control the direction of blood flow. There are four valves: tricuspid, pulmonic, mitral and aortic. Circulation begins at the right side of the heart. On the right side, the tricuspid valve separates the right atrium and right ventricle. On the left side, the mitral valve separates the left atrium and the left ventricle. An electric system transmits signal throughout the heart to control its pumping, the signal starts in the SA or Sino atrial 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 via the AV or atrioventricular node which controls the signal so the atria contracts before the ventricles. In the ventricles pathways carry the signal throughout the muscle so that they contract at the same time to pump blood to the lungs and through the body.

FUNCTIONS OF THE HEART

- a) The heart pumps blood through the blood vessels, arteries and veins to all parts of the body.
- b) The arteries carry blood with oxygen and other nutrients throughout the body.
- c) Veins take blood back to the heart which pumps it to the lungs to be oxygenated.
- d) The heart arteries (coronary arteries) provide oxygen and nutrients to the heart muscle. The right coronary artery supplies blood to the bottom and back of the heart. The left coronary artery splits into two vessels; one supplies blood to the front of the heart, the other branch delivers blood to the left side of the heart.

WRITE ON FIVE DIFFERENT CONGENITAL ANOMALIES OF THE HEART

1) 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. There are four kinds of ASD holes, depending on their position along the septum – the wall that separates the two sides of the heart. In most cases, infants with ASDs are asymptomatic. 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.

2) 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.

3) 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.

4) Ventricular septal defect

Ventricular septal defect occurs in 2 to 7 percent of all live births and accounts for about 20 percent of all congenital heart defects, according to the American Heart Association. It's the most common congenital heart defect among newborns, according to the American Heart Association. VSDs are small- to large-sized holes between the lower chambers of the heart. They're typically diagnosed due to the presence of a heart murmur (an additional sound heard when listening to the heart with a stethoscope). Many infants and children with VSD are otherwise asymptomatic. The larger the hole is, the greater the chance that the infant will develop congestive heart failure from excessive blood flow crossing the hole from the left ventricle back into the lungs, essentially flooding the lungs. Infants with large VSDs typically breathe fast, have high heart rates, sweat all the time (even while resting) and have difficulty gaining weight.

5) Pulmonary valve stenosis

This class of heart defect represents any form of obstruction to blood flow going from the right ventricle to the lungs. In some cases, the obstruction is present in the pulmonary valve itself, either from an abnormally small structure or due to the fusion of one or two of the valve leaflets, which are flaps that allow blood to flow forward and close to prevent blood from flowing backward. The level of obstruction may be below or above the valve. Typically, infants with this congenital heart defect have a murmur that helps physicians provide a diagnosis, often with the use of an echocardiogram. However, some patients are asymptomatic. If the degree of obstruction increases, it could overload the right side of the heart with pressure, causing the ventricular muscle to work harder and become abnormally thickened.