18/MHS07/022

PHARMACOLOGY

ANA 202

ASSIGNMENT:

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

2. Write on five (5) different congenital anomalies of the heart.

THE HEART

The heart is a muscular organ roughly the size of a closed fist, located just behind and left of the breastbone. The purpose of the heart is to pump blood through blood vessels, arteries, veins to all part of the body. The inside of the heart is divided into four (4) chambers:

* The top two (2) chambers are called ATRIA (COLLECTING CHAMBERS FOR BLOOD)
* The two lower chambers are called VENTRICLES (receives the blood from the atria and pumps it into the lungs and the body)

The chambers are separated by valves which controls the direction of blood flows. There are four (4) valves:

* Tricuspid
* Pulmonary
* Mitral
* Aortic valves.

Circulation begins at the right side 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 its receives oxygen it flows to the left atrium and then into the left ventricle where it is pumped to the aortic and the rest of the body. On the right side of the heart the tricuspid valve separates the right atrium and the right ventricle allowing blood to enter the ventricle but not flow backwards to the atrium, blood flows through the pulmonary valve to go to the lungs. On the left side of the heart the mitral valve separates the left atrium and the left ventricle blood flows from the left ventricle to the aortic valve and to the rest of the body.

ARTERIES:

Carry oxygenated blood from the heart to the rest of the body. Arteries are strong and stretchy, which helps push blood through the circulatory system. Their elastic walls help keep [blood pressure](https://www.medicalnewstoday.com/articles/270644.php) consistent. Arteries branch into smaller arterioles.

VEINS:

These carry deoxygenated blood back to the heart and increase in size as they get closer to the heart. Veins have thinner walls than arteries.

The heart arteries, coronary arteries provide oxygen and nutrients to the heart muscles the right pulmonary artery supplies blood to the bottom and the back of the heart , the left pulmonary artery splits into two vessels one branch supplies blood to the front of the heart while the other branch deliveries blood to the left side of the heart.

ELECTRIC SYSTEM

The electric system transmit signals throughout the heart to control its pumping , the electrical signals starts at the Sino- atrial or( SA node) located in the upper part of the right atrium known’s as the natural peace maker of the heart the electrical signal passes down to the lower chambers of the heart by the atrioventricular (AV node) which controls the signals so the atria contracts before the ventricles, in the ventricles the path ways carries the signals throughout the muscles so that the contracts at the same time to pump bloods to the lungs, and the body.

CONGENITAL HEART DISEASE

Congenital heart disease, or a congenital heart defect, is a heart abnormality present at birth. The problem can affect:

* the heart walls
* the heart valves
* the blood vessels

There are numerous types of congenital heart defects. They can range from simple conditions that don’t cause symptoms to complex problems that cause severe, life-threatening symptoms.

TYPES

Though there are many different types of congenital heart defects, they can be divided into three main categories:

* In heart valve defects, the valves inside the heart that direct blood flow may close up or leak. This interferes with the heart’s ability to pump blood correctly.
* In heart wall defects, the natural walls that exist between the left and right sides and the upper and lower chambers of the heart may not develop correctly, causing blood to back up into the heart or to build up in places where it doesn’t belong. The defect puts pressure on the heart to work harder, which may result in high blood pressure.
* In blood vessel defects*,*the arteries and veins that carry blood to the heart and back out to the body may not function correctly. This can reduce or block blood flow, leading to various health complications.

CAUSES

Congenital heart disease occurs as a result of an early developmental problem in the heart’s structure. The defect typically interferes with the normal flow of blood through the heart, which may affect breathing. Although researchers aren’t exactly sure why the heart fails to develop correctly, suspected causes include the following:

* The heart defect may run in families.
* Taking certain prescription drugs during pregnancy puts a child at a higher risk for a heart defect.
* Using alcohol or illegal drugs during pregnancy can increase a child’s risk of having a heart defect.
* Mothers who had a viral infection during the first trimester of pregnancy are more likely to give birth to a child with a heart defect.
* Increased blood sugar levels, such as occurs with diabetes, may affect childhood development.

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](http://www.webmd.com/a-to-z-guides/rm-quiz-blood-basics) from the two sides mix.

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.

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.

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.

VALVE DEFECTS

Valves control the flow of blood through your heart’s ventricles and [arteries](http://www.webmd.com/heart/picture-of-the-arteries). And some minor heart defects can involve the valves, including:

* **Stenosis.** When your valves become narrow or stiff, and won’t open or allow blood to pass easily.
* **Regurgitation.** Your valves don’t close tightly, which lets your blood leak backward through them.
* **Atresia.** This happens when your valve isn't formed right nor has no opening to let your blood pass through. It causes more complicated heart problems.
* **Ebstein’s anomaly.** This is a defect in another heart valve, the tricuspid valve, which may keep it from closing tightly. Babies who have Ebstein’s also often have an atrial septal defect (ASD).
* **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.