Hormones

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**Abstract:**

 The endocrine system is the communication system of the body which works on the hormones as a chemical messenger system. This type of communication is long-lived, slow and permanent. The nervous system uses neurons as a chemical messenger system for communication. This type of response is short-lived, quick and temporary. In a bacterial patient, the white blood cell count is altered. The number of neutrophils decreases if the patient is suffering from a bacterial infection. The heart has four valves which are involved in its proper functioning. If these valves are blocked due to some reason or they are not functioning properly, artresia, regurgitation, and stenosis.

**Introduction:**

 Neurons are the main component of a body’s communication system, assembled in the form of a network which allows the flow of signals between the brain and the body. This organization of the networks, which is comprised of more than 1 trillion neurons, is known as the nervous system. On the other hand, the endocrine system is also involved in communication., which for the purpose utilizes glands, located in the whole body. These glands are involved in the secretion of hormones which further, utilize a variety of things such as blood pressure, growth, and digestion, etc. In terms of similarities, the functioning of both systems involves the use of chemical messengers to the next signal cells. The human body must have a maintained internal environment, which is known as homeostasis. Both, nervous and endocrine systems work to maintain this environment and equilibrium. However, there are other ways in which both systems differ

 The biggest difference is that the endocrine system used hormones as the chemical messengers which are transported into the blood for the target cells, whereas the nervous system uses electrical impulses to send signals through neurons. The nervous system transmission is very quick, temporary and short-lived. However, the endocrine system takes its time, but it is permanent and long-lasting. Through the endocrine system, communication is slower but widespread, but in the nervous system, responses are very fast and extremely localized.

 White Blood Cells (WBCs) or Leukocytes are the immune system cells which are involved in the protection of the body against the foreign invaders and the infectious diseases. There are multiple types of white blood cells which are neutrophils, eosinophils, basophils, lymphocytes, and monocytes. Among all of the white cells which are present in the body, nearly half of them are eosinophils. These are the cells, first in line which are involved in the immune response against a bacteria. They kill the bacteria by ingesting them. They have a limit of ingesting 5 to 20 bacteria in a lifetime. Normal white blood count ranges from 4,000 to 11,000 cells per liter blood. In the case of a bacterial disease, there is alliteration in the count of white blood cells. White blood cell count is increased. Since neutrophils are involved in the ingestion, a decrease in the neutrophils of the body can be seen.

 The heart is a muscular organ, which is present in all animals and is involved in the pumping of the blood through the circulatory system and the vessels. It provides in assisting the body for the removal of metabolic wastes and is involved in providing the body with blood and oxygen. The heart has four valves, all of which has a remarkable structure, which is involved in the regulation of the blood flow through a proper mechanism of opening and closing. These are of four types

 Aortic Valve and Pulmonary Valve: which control the blood flow out of the ventricles.

Mitral Valve and Tricuspid Valve: which control the flow of the blood from the atria to the ventricles.

During the normal functioning of the heart, there is no obstruction in the blood flow and the blood flow is smooth because of these valves. The backflow of the blood occurs if one of the valves doesn’t close properly, this can cause leakage of the blood and the blood flows back into the chambers. This can cause stenosis and regurgitation.

**Conclusion:**

There are two methods of communication in the body. One is the nervous system, which involves neurons as chemical messenger systems and other is the endocrine system which utilizes hormones as a chemical messenger system. In a bacterial patient, the white blood cell count is altered. The number of neutrophils decreases if the patient is suffering from a bacterial infection. The backflow of the blood occurs if one of the valves doesn’t close properly, this can cause leakage of the blood and the blood flows back into the chambers. This can cause stenosis and regurgitation.

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