ENWEZOR ONYEDIKACHUKWU DAVID

MEDICINE AND SURGERY

18/MHS01/148

PHYSIOLOGY ASSIGNMENT

1.

LONG TERM REGULATION OF MEAN ATRIAL BLOOD PRESSURE

The most important long term regulation of mean atrial blood pressure is the renin-angiotensin aldosterone system. This system takes minutes, hours, days to be activated.

When there is a decrease in the atrial blood pressure the would be a decrease in the renal blood flow this cause the kidney to release renin which is a hormone . the liver secrets angionosen which is then converted to angiotensin 1 by renin, then it is then converted to angiotensin 2 in the lungs by angiotensin converting enzyme. Angiotensin 2 acts on the adrenal glands which causes it to secret aldosterone which stimulates water retention .this would lead to a substantial renal fluid absorption which in return help to maintain the total blood pressure ,stroke volume, cardiac output and mean atrial blood pressure .

2.

A.

PLUMONARY CIRCULATION

This type of blood circulation is also referred to as lesser circulation.

This involves the circulation of deoxygenated blood which bigger than the right ventricle of the heart. The blood is pumped through the pulmonary artery to the lungs which diffusion occurs causing the exchange of gases between the alveoli of the lungs and the deoxygenated blood oxygenated blood flows to the right atrium to the pulmonary vein.

B

CIRCLE OF WILLIS

The circle of wills is involved in the cerebral circulation it is formed by the branches of the basilar artery and internal Cortaid artery .the basilar artery is formed by the fusion of the 2 vertebral arteries .the basilar artery enters the circle of wills through the posterior part, it fuses with the the posterior cerebral artery amd it then accquries 2 parts which forms the posterior part of the circle of wills . the blood then flows into the posterior communicating artery .

The internal Carotid artery enters in to the circle of wills through the anterior part , it then gives of branches known as the ophthalmic artery . the internal carotid artery gives out another 2 sets of branches know as the anterior carotid artery and lenticulo striate artery which splits in to 2 segments and forms the anterior communicating artery .

C.

SPPANCHIC CIRCULATION

The splanchnic circulation is composed of gastric, small intestinal, colonic, pancreatic, hepatic, and splenic circulations, arranged in parallel with one another. The three major arteries that supply the splanchnic organs, celiac and superior and inferior mesenteric, give rise to smaller arteries that anastomose extensively. The circulation of some splanchnic organs is complicated by the existence of an intramural circulation. Redistribution of total blood flow between intramural vascular circuits may be as important as total blood flow. Numerous extrinsic and intrinsic factors influence the splanchnic circulation. Extrinsic factors include general hemodynamic conditions of the cardiovascular system, autonomic nervous system, and circulating neurochemical agents. Intrinsic mechanisms include special properties of the vasculature, local metabolites, intrinsic nerves, paracrine substances, and local hormones. The existence of a multiplicity of regulatory mechanisms provides overlapping controls and restricts radical changes in tissue perfusion.

D.

CORONARY CIRCULATION .

Coronary circulation is the circulation of blood through the blood vessels of the heart muscle which is known as a myocardial. Blood flowing through the chambers of the heart does not nourish the myocardium. the heart muscle is

supplied by to coronary arteries name the left and the right coronary arteries which are from the first branch of the aorta.

The right coronary artery supplies the right ventricle and the posterior part of the left ventricle while the left coronary artery supplies the left ventricle and also the anterior part of the right ventricle . The coronary artery are subdivided into branches which run along suffice of the heart. These branches are known as ok epicardia arteries which gives rise to smaller branches know as final arteries . The final arteries run at right angles through the heart muscle near to the inner aspect of wall of the heart.

E.

CUTANEOUS CIRCULATION .

The cutaneous circulation is the circulation and blood supply of the skin. The skin is not a very metabolically active tissue and has relatively small energy requirements, so its blood supply is different to that of other tissues.

Some of the circulating blood volume in the skin will flow through will flow through arteriovenous anastomoses (AVAs) instead of capillaries. AVAs serve a role in temperature regulation.

AVAs are low-resistance connections between the small arteries and small veins that supply and drain the skin. These allow the shunt of blood directly into the venous plexus of the skin, without it passing through capillaries. Since AVAs contain no capillary section, they are not involved in transport of nutrients to/from the tissues, but instead play a major role in temperature regulation. Cutaneous regulation id regulated mainly by temperature.

3

CARDIOVASCULAR ADJUSTMENT THAT HAPPENS DURING EXERCISE .

During exercise there are so many activities which occur into body and one of those activities is the adjustment of the cardiovascular . during exercise impulse would be sent from the cerebral cortex to the cardiac accelerating center located

in the medulla which causes the stimulation of the sympathetic fibers ,it then cause the stimulation of the sino atrial node and the ventricles . this process then cause the blood pressure ,heart rate , cardiac out put and contractility to increase .