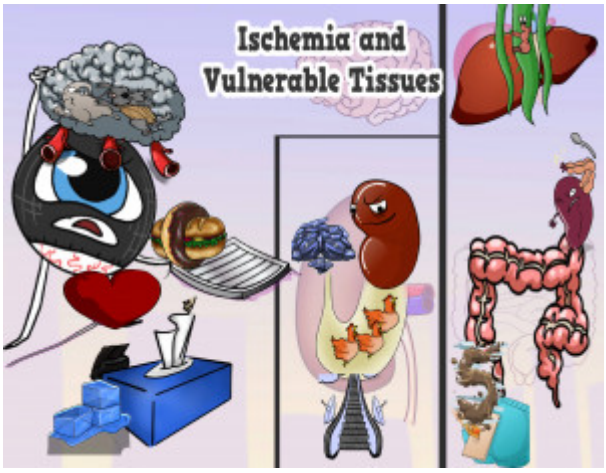
Ischemia and Vulnerable Tissues



PLAY PICMONIC

Brain
Brain
The brain is vulnerable to ischemia. Complete obstruction of blood flow to the brain for 5 minutes will induce the death of vulnerable neurons in several brain regions. This is due to the brain's high metabolic rate, which accounts for 25% of basal metabolism in the whole body.

MCA-ACA and MCA-PCA Interface
Ant-eater Post-terrier on Middle Cerebral Artery
ACA/MCA/PCA comprise most of the brain regions vulnerable to ischemia. It is a vulnerable border zona between the tissues supplied by the anterior, posterior, and middle cerebral arteries, also called watershed zones. Pathophysiologic explanation of this zone is still not well understood, but it is thought to relate to different expressions on the excitatory glutamate neurotransmitter receptors on neurons.

Heart
Heart
Ischemia for 5-20 minutes will trigger myocardial stunning, leading to impairment of reperfusion due to a defect in contractile function. If it prolongs, 20-40 minutes of ischemia can induce death in cardiac myocytes.

Subendocardium of Left Ventricle
Sub-in-donut on Ventricle-vent
The Subencocardium of the left ventricle is the most vulnerable region to ischemia. This vulnerability occurs due to the limitation of the left ventricle's ability to receive oxygen from its blood supply during systole (heart squeezed).

Kidney
Kidney
The kidney is vulnerable to ischemia. This vulnerability is associated with the kidney being the primary recipient of the heart's cardiac output.

Proximal Tubule
P-Rocks Tube
The outer medulla had a large oxygen consumption, making it the most vulnerable part of the kidney to ischemia. The most affected region in the outer medulla is the S3 segment of the proximal tubule and the medullary thick ascending limb of the loop of Henle (mTAL).

Thick Ascending Limbs of the Loop of Henle
Ascending-escalator Loop of Hens
The thick ascending limb is vulnerable to ischemia and depends on tubular reabsorptive demand. The ischemic process can also be less affected due to its glycolytic machinery mechanism for ATP synthesis.

Liver
Liver
Liver damage can occur from ischemia-reperfusion injury.

Sign up for FREE at picmonic.com

Central Vein

Veiny-point

The central vein in the liver (zone 1 and 2) receives the highest amount of oxygen, making it the most vulnerable region to hepatic blood flow changes. On the other hand, one 3 (perivascular zone) receives lower oxygen concentration blood.

Colon

Colon

Two main areas in the colon that are vulnerable to ischemia are splenic flexure (Griffiths point) and rectosigmoid junction (Sudek's Point). These regions are between two major arteries that supply the colon.

Splenic Flexure

Spleen-with-spoon Flexing

Splenic flexure, known as Griffiths's Point, is one of the two parts of the colon that is vulnerable to ischemia. It is an area between the Superior Mesenteric Artery and Inferior Mesenteric artery.

Rectosigmoid Junction

Rectum-rectangle S-mud

The Rectosigmoid junction, known as Sudek's Point, is one of the two parts of the colon vulnerable to ischemia. It is an area between the inferior mesenteric artery and the superior rectal artery supplies.

Sign up for FREE at picmonic.com