Diagnostic Studies Online Content (1H)

In order to receive full credit (1H class time) for this assignment, it must be completed in its entirety by 2/13/2023 at 0800. Any assignment not completed in its entirety will result in missed class time.

What blood laboratory studies might be altered in an individual with a venous thromboembolism (VTE)?

Laboratory studies that may be altered in an individual with a venous thromboembolism (VTE) would include blood studies such as ACT, aPTT, INR, Hgb, Hct, and platelet count. ACT, aPTT, INR, and platelet count all have to do with the bloods ability to clot. If ACT, aPTT, or INR are low that means the blood is clotting faster than normal and the patient is at a high risk of experiencing a blood clot. For example, ACT is used most often during large dose heparin therapy to ensure a therapeutic range. Hemoglobin and Hematocrit levels show the patients RBC level. Another laboratory study that would be seen for a patient with a venous thromboembolism would be a D-dimer. This test shows if there is any fragment of fibrin formed in the blood as a result of a broken-down blood clot. An elevated D-dimer suggests high amounts of clot lysis suggesting a VTE. A venous compression ultrasound is another test that may be conducted. This ultrasound examines deep femoral, popliteal, and posterior tibial veins. What normally should be seen is the veins collapsing when pressure is applied, but in the case of a thrombus being present the veins will fail to collapse when apply pressure. One last test is a duplex ultrasound. This is a combination of the compression ultrasound along with spectral and color flow doppler. During this test the veins are looked at for variation, compressibility, and filling defects to determine location and extent of thrombus. This test is most widely used to diagnose VTE.

What does an elevated D-dimer suggest?

An elevated D-dimer suggests that there is a blood clot. This is because it tests for fragments of fibrin that are formed in relation to clot lysis.

A peripheral arteriography and/or venography can be used to detect and visualize what?

A peripheral arteriography and/or venography can be used to detect and visualize peripheral vessel blood flow. This is down by injecting contrast media into appropriate arteries or veins. X-ray studies are done to detect atherosclerotic plaques, occlusion, aneurysms, venous abnormalities, or traumatic injury.

What problems can a transesophageal echocardiogram (TEE) detect?

A transesophageal echocardiogram (TEE) can detect problems such as mitral valve disease, endocarditis vegetation, and thrombus before a cardioversion is done. As the transducer passes

down the esophagus it sends back clear images of heart size, wall motion, and valve abnormalities.

If you are the nurse assisting with a TEE, what are your responsibilities?

If I were the nurse assisting with a TEE my responsibilities would be to ensure the patient is NPO for six hours prior to the procedure, establish IV access for sedation, monitor vital signs, suction as needed, monitor for complications (esophageal tears, aspiration, and vasovagal reactions), and assess for gag reflex to return post procedure to allow the patient to resume eating and drinking.

What is a Lexiscan stress test and why is it performed? What must you, as the nurse, ask the patient prior to performing the test?

A Lexiscan stress test, also known as pharmacologic nuclear imaging, is a chemical stress test done when a patient is unable to exercise on a treadmill. Lexiscan stimulates the effects of exercise. The purpose of this test is to identify cardiac symptoms and rhythm changes in a safe environment. The nuclear agent provides perfusion images that can be utilized to diagnose coronary artery disease (CAD). Prior to performing this test I must ask the patient if they have had any caffeine within the past 12 hours and if they take the medication theophylline. Theophylline diminishes the effects of Lexiscan and must be held for 24 hours prior to the test being conducted.

If you are conducting a stress test on a patient, what are some reasons to conclude or terminate the test?

1. If peak tolerance is achieved.
2. The patient experiences angina.
3. If there is a significant change in vital signs from baseline.
4. If there is ECG changes that indicate cardiac ischemia.
5. If peak heart rate is achieved.

What are some things we can identify from a 12-lead ECG?

1. Conduction Problems
2. Dysrhythmias
3. Hypertrophy
4. Pericarditis
5. Ischemia or infarction
6. Drug effectiveness

A BNP of 775 would be diagnostic for what? Heart Failure

There are two substances released in the blood when cardiac tissue damage occurs. Name them:

1. Troponin
2. CK-MB

View the following 3-minute TEE video:

https://www.youtube.com/watch?v=9Us9mXXILSk

In this particular case they are looking for the presence of what inside the heart?

In this particular case they are looking for the presence of blood clots inside the heart. This is because A-fib increases the risk for blood clot formation. They have to perform a TEE to rule out blood clot formation before conducting an electrical cardioversion to avoid spreading a potential blood clot and cause life threatening consequences such as a PE or CVA.

Optional question: When the cardiac rhythms shows on the bottom of the TEE screen, what tells you the patient is in A-fib (atrial fibrillation)?

The cardiac rhythm was irregular and there was an absence of p waves. Also her heart rate was higher than normal.