

NAME: M.ASIF KHAN

ID : 14710

SUB TO: ADNAN AHMAD

SUB :

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ASSIGNMENT QUESTION:

Liver Function Test :

(LFTs or LFs), also referred to as a hepatic panel, are groups of blood tests that provide information about the state of a patient's liver.[1] These tests include prothrombin time (PT/INR), activated Partial Thromboplastin Time (aPTT), albumin, bilirubin (direct and indirect), and others. The liver transaminases aspartate transaminase (AST or SGOT) and alanine transaminase (ALT or SGPT) are useful biomarkers of liver injury in a patient with some degree of intact liver function.[2][3][4] Most liver diseases cause only mild symptoms initially, but these diseases must be detected early. Hepatic (liver) involvement in some diseases can be of crucial importance. This testing is performed on a patient's blood sample. Some tests are associated with functionality (e.g., albumin), some with cellular integrity (e.g., transaminase), and some with conditions linked to the biliary tract (gamma-glutamyl transferase and alkaline phosphatase). Several biochemical tests are useful in the evaluation and management of patients with hepatic dysfunction. These tests can be used to detect the presence of liver disease, distinguish among different types of liver disorders, gauge the extent of known liver damage, and monitor the response to treatment. Some or all of these measurements are also carried out (usually about twice a year for routine cases) on those individuals taking certain medications, such as antiepileptic drugs, to ensure that the medications are not adversely impacting the person's liver.

Renal Function Test:

Your kidney numbers include 2 tests: ACR (Albumin to Creatinine Ratio) and GFR (glomerular filtration rate). GFR is a measure of kidney function and is performed through a blood test. Your GFR will determine what stage of kidney disease you have – there are 5 stages. Know your stage. ACR is a urine test to see how much albumin (a type of protein) is in your urine. Too much albumin in your urine is an early sign of kidney damage.

- **Urine Test called ACR.** ACR stands for “albumin-to-creatinine ratio.” Your urine will be tested for albumin. Albumin is a type of protein. Your body needs protein. But it should be in the blood, not the urine. Having protein in your urine may mean that your kidneys are not filtering your blood well enough. This can be a sign of early kidney disease. If your urine test comes back “positive” for protein, the test should be repeated to confirm the results. Three positive results over three months or more is a sign of kidney disease.

Blood Test to estimate your GFR. Your blood will be tested for a waste product called creatinine. Creatinine comes from muscle tissue. When the kidneys are damaged, they have trouble removing creatinine from your blood. Testing for creatinine is only the first step. Next, your creatinine result is used in a math formula with your age, race, and sex to find out your glomerular filtration rate (GFR). Your GFR number tells your healthcare provider how well your kidneys are working. Check with your doctor about having a GFR test.

Lipid Profile:

A complete cholesterol test is also called a lipid panel or lipid profile. Your doctor can use it to measure the amount of “good” and “bad” cholesterol and triglycerides, a type of fat, in your blood.

Cholesterol is a soft, waxy fat that your body needs to function properly. However, too much cholesterol can lead to:

- heart disease
- stroke
- atherosclerosis, a clogging or hardening of your arteries

If you're a man, you should get your cholesterol levels checked regularly, starting by age 35 or younger. If you're a woman, you should begin routine cholesterol screening by age 45 or younger. To be on the safe side, you may want to get your cholesterol tested every five years beginning as early as age 20. If you've been diagnosed with diabetes, heart disease, stroke, or high blood pressure, or if you're taking medication to control your cholesterol levels, you should check your cholesterol every year.

Cardiac Enzyme Profile:

Cardiac enzyme studies measure the levels of enzymes, and proteins that are linked with injury of the heart muscle. These include the enzymes creatine phosphokinase (CPK) and creatine kinase (CK), and the proteins troponin I (TnI) and troponin T (TnT). Low levels of these enzymes and proteins are normally found in your blood, but if your heart muscle is injured, such as from a heart attack, the enzymes and proteins leak out of damaged heart muscle cells, and their levels in the bloodstream rise.

Because some of these enzymes and proteins are also found in other body tissues, their levels in the blood may rise when those other tissues are damaged. Cardiac enzyme studies must always be

compared with your symptoms, your physical examination findings, and **Electrocardiogram ECG ,EKG** results.

Electrolytes:

An electrolyte is a substance that produces an electrically conducting solution when dissolved in a polar solvent, such as water. The dissolved electrolyte separates into cations and anions, which disperse uniformly through the solvent. Electrically, such a solution is neutral. If an electric potential is applied to such a solution, the cations of the solution are drawn to the electrode that has an abundance of electrons, while the anions are drawn to the electrode that has a deficit of electrons. The movement of anions and cations in opposite directions within the solution amounts to a current. This includes most soluble salts, acids, and bases. Some gases, such as hydrogen chloride, under conditions of high temperature or low pressure can also function as electrolytes. Electrolyte solutions can also result from the dissolution of some biological (e.g., DNA, polypeptides) and synthetic polymers (e.g., polystyrene sulfonate), termed "polyelectrolytes", which contain charged functional groups. A substance that dissociates into ions in solution acquires the capacity to conduct electricity. Sodium, potassium, chloride, calcium, magnesium, and phosphate are examples of electrolytes.

Fertility Hormones:

Fertility medication, better known as fertility drugs, are drugs which enhance reproductive fertility. For women, fertility medication is used to stimulate follicle development of the ovary. There are currently very few fertility medication options available for men.

Agents that enhance ovarian activity can be classified as either Gonadotropin releasing hormone, Estrogen antagonists or Gonadotropins.

Thyroid profile:

Thyroid function tests are a series of blood tests used to measure how well your thyroid gland is working. Available tests include the T3, T3RU, T4, and TSH. The thyroid is a small gland located in the lower-front part of your neck. ... The thyroid produces two major hormones: triiodothyronine (T3) and thyroxine (T4).

Tumor Marker:

A tumor marker is a biomarker found in blood, urine, or body tissues that can be elevated by the presence of one or more types of cancer. There are many different tumor markers, each indicative of a particular disease process, and they are used in oncology to help detect the presence of cancer. An elevated level of a tumor marker can indicate cancer; however, there can also be other causes of the elevation (false positive values).

Tumor markers can be produced directly by the tumor or by non-tumor cells as a response to the presence of a tumor.

Although mammography, ultrasonography, computed tomography, magnetic resonance imaging scans, and tumor marker assays help in the staging and treatment of the cancer, they are usually not definitive diagnostic tests. The diagnosis is mostly confirmed by biopsy.