

## Relation of liver diseases in type ii diabetes patients: an overview

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### ABSTRACT

That Patients Who has a Liver disease, May because of type 2 diabetes .In cirrhosis Patients diabetes may be occur. In diabetic patients cirrhosis may be occurring. Diabetic play an important role of liver disease.

In Diabetic Patients, The Normal Level of SGPT AND SGOT may Increase than the Chances of Liver Disease. In Liver Disease patients, The Normal Level of SGPT AND SGOT Increase than the Chances of Diabetes. Treatment of diabetes may be complex.

**Key Words:** Cirrhosis, Liver disease, SGPT and SGOT Level

### INTRODUCTION

#### 1. DIABETES

Diabetes is a defect in the body's ability to convert glucose (sugar) to energy. Glucose is the main source of fuel for our body. When food is digested it is changed into fats, protein, or carbohydrates. Foods that affect blood sugars are called carbohydrates.

Diabetes mellitus is a group of metabolic diseases characterized by hyperglycemia resulting from defects in insulin secretion, insulin action or both. The chronic hyperglycemia of diabetes associated with long term damage, dysfunction, and failure of various organs especially the eyes, kidneys, nerves, heart and blood vessels. Carbohydrates, when digested, change to glucose.(ICMR)

#### 2. SYMPTOMS:

- Blurred vision
- Unusual thirst
- Frequent urination
- Slow-healing cuts
- Unexplained tiredness
- Rapid weight loss.

#### 3. LIVER DISEASE:

Liver disease (also called hepatic disease) is a type of damage to liver cell or disease of the liver.

The symptoms related to liver dysfunction include both physical signs and a variety of symptoms related to digestive problems, blood sugar problems, Immune disorders, abnormal absorption of fats, and metabolism problems.

#### 4. SIGN AND SYMPTOMS

The symptoms related to liver dysfunction include both physical signs and a variety of symptoms related to digestive problems, Coagulopathies blood sugar problems, Immune disorders, abnormal absorption of fats, and metabolism problems. The Mal absorption of fats may lead to symptoms that include indigestion, reflux, deficit of fat soluble Vitamins, Hemorrhoids, Gallstones, and Intolerance to fatty foods, intolerance to alcohol, Nausea and vomiting attacks, abdominal bloating, and Constipation. Nervous system disorders include depression, mood changes, especially anger and irritability, poor concentration and "Foggy brain", overheating of the body, especially the face and torso, and recurrent headaches (including migraine) associated with nausea.

#### 5. LIVER BLOOD ENZYME:

- The most sensitive and widely used liver enzymes:
- Aspartate Aminotransferase (AST or SGOT)
- Alanine Aminotransferase (ALT or SGPT).
- These enzymes are normally contained within liver cells. If the liver is injured, the liver cells spill the enzymes into blood, raising the enzyme levels in the blood and signaling the liver damage.

#### 6. ELEVATED AST and ALT

AST (SGOT) and ALT (SGPT) are sensitive indicators of liver damage from different types of disease. But it must be emphasized that higher-than-normal levels of these liver enzymes should not be automatically equated with liver disease. They may mean liver problems or they may not. The interpretation of elevated AST and ALT levels

depends upon the whole clinical picture and so it is best done by doctors experienced in evaluating liver disease.

The precise levels of these enzymes do not correlate well with the extent of liver damage or the prognosis (outlook). Thus, the exact levels of AST (SGOT) and ALT (SGPT) cannot be used to determine the degree of liver disease or predict the future. For example, patients with acute viral hepatitis A may develop very high AST and ALT levels (sometimes in the thousands of units/liter range). But most patients with acutviral hepatitis A recover fully without residual liver disease. For a contrasting example, patients with chronic hepatitis C infection typically have only a little elevation in their AST and ALT levels. Some of these patientsmay have quietly developed chronic liver disease such as chronic hepatitis and cirrhosis (advanced scarring of the liver)

#### **7. AST AND ALT the Normal Range of values for:**

AST (SGOT) is from 5 to 40 units per liter of serum (the liquid part of the blood).

ALT (SGPT) is from 7 to 56 units per liter of serum.

#### **8. DECREASE SGPT AND SGOT LEVEL:**

Serum glutamate pyruvate transaminase (SGPT), now called Alanine aminotransferase (ALT), is a liver enzyme that is vital for energy production. It is present in different tissues such as the liver, skeletal muscles and heart, but is found with the highest concentration in the liver. When the liver is damaged, SGPT leaks out of the cells and into your blood. Normal SGPT level ranges from 7 to 56 units per litre of blood. High levels of SGPT in the blood may indicate liver problems and damage, but they may also be elevated due to strenuous activity.

#### **Diet Modifications:**

Get more vitamin D. A damaged liver allows SGPT to seep into the blood. According to a recent study, vitamin D prevents liver damage, which aids in reducing SGPT levels – those with high levels of vitamin D are less vulnerable to liver disease than those with low levels of vitamin D. Therefore, it's a good idea to include at least one fruit and vegetable in each major meal to have a daily dose of vitamin D, staving off liver disease.

Good sources of vitamin D are green leafy vegetables, cod liver oil, fish, fortified cereals, oysters, caviar, tofu, soy milk, dairy products, eggs, mushrooms, apples and oranges.

Eat a nutrient-rich, plant-based diet. Eating organic foods helps regulate the liver, allowing it to cleanse itself of toxins and create new cells to stop the leakage of SGPT into the blood. These foods are often rich in antioxidants,

vitamins, and minerals, in addition to being low in fat – in other words, they're great for your entire body. Focus your diet on fresh, whole foods that you've prepared yourself. Stay away from products that have gone through unnecessary processing, ridding them of their nutrients.

Make sure your diet has a lot of color. Green leafy vegetables, broccoli, carrots, squash and a variety of fresh fruits should be staples of your diet, along with nuts, whole grains, low-fat dairy products and lean meats.

Avoid foods high in fat. Fatty foods make it hard for the liver to process nutrients in general. Some fat in the liver is normal, but if your liver is more than 10% fat, you know have a condition called "fatty liver" disease.[2] The presence of these fatty cells can then lead to inflammation in the liver and damage to surrounding liver tissue.[3] If the liver is damaged, the damaged liver cells release SGPT into the bloodstream, increasing your levels.

It is best to avoid fatty foods such as oily foods that are deep fried, meat fats, pork and chicken skins, coconut oils, butter, cheese, processed foods, sausages, bacon, junk foods and carbonated drinks.

Avoid foods high in salt or sodium. Excessive amounts of salt in the body, especially in the liver, cause swelling and fluid retention. This makes it harder for the liver to filter waste. This, over time, can lead to liver damage, allowing SGPT from the liver to seep into your bloodstream, raising your levels.

Foods to be avoided are salt, bouillon cubes, baking soda, soy sauce, salad dressings, bacon, salami, pickled foods, and other processed foods. Avoid adding salt to your dishes whenever possible.

Since salt is prevalent everywhere, try to do more of your cooking at home to control your intake. The average adult needs only 2300mg (1 teaspoon) a day.

Stop drinking alcoholic beverages. Alcohol is very harmful to the liver and, with prolonged drinking, can shut down entirely. When alcohol is ingested it goes directly to the bloodstream. All the blood is then received and filtered in the kidney. It is now the liver's job to filter all the toxic waste in the body, including toxins from alcohol. This, over time, can create serious liver damage.[5] The more damaged your liver is, the more SGPT can leak out of its cells and into your blood.

Alcohol consumption has been a major contributor to liver diseases such as fatty liver, liver cirrhosis, and hepatitis. Exercise self-discipline to avoid aggravating

diseases caused by too much alcohol consumption that will help in decreasing SGPT from leaking into your blood stream.

Get daily exercise. Simple exercises such as brisk walking, jogging, and swimming can improve your overall health in addition to helping your liver stay healthy. Staying active excretes toxins in the body through sweating. It also helps burn fats, keeping you trim. Exercise will produce more lean muscles, healthy organs – including your liver – and keep your body in tip-top condition. The fewer toxins your liver has to clean up, the more energy it can dedicate to strengthening its cells.

At least 30 minutes of daily exercise every day can make a difference in your liver's health. When toxins are excreted it reduces the amount of work that the liver will be doing, thus preventing increased SGPT levels.

Quit smoking. Smoke from cigarettes contains toxins like nicotine and ammonia. When you are exposed to these toxins, they stick to your skin and will be absorbed, giving the liver another workload to filter, getting rid of all the toxins in your body. It's best to avoid secondhand smoke, too, as this has similar effects.

Not only is it bad for your SGPT levels, but it's bad for your heart, lungs, kidneys, skin, hair and nails, too. It also causes those around you undue discomfort. If you're SGPT levels aren't enough, do it for these reasons instead.

Prevent exposure to other harmful chemicals, too. Smoke from air pollution contains fumes, gasoline, and ammonia, amongst other harmful chemicals that have dissipated in the air. If you live or work around an environment where you are constantly exposed to these toxins, reduce your exposure as much as possible. These toxins may leak through your skin causing liver damage and raising your SGPT levels.

If you must be around toxic fumes, wear long sleeves, pants, a mask, and gloves at all times. The more precautions you take, the healthier you'll be – especially in the long-term.

Stop taking over-the-counter drugs. If your liver is already damaged and you continue to take drugs that your physician did not prescribe, the liver carries the burden of metabolizing these drugs and filtering harmful substances which can further contribute to liver damage. It is best to take only the drugs which your doctor okays you to take.

If in doubt, consult with your physician. There are drugs that are hepatotoxic (toxic to the liver) and he/she may shift you to non-hepatotoxic drugs.

Medications such as antibiotics and non-steroidal anti-inflammatory drugs (NSAIDs) can cause elevated SGPT and SGOT levels. It's wise to talk to your primary doctor about different types of medications to prevent possible liver damage.

Consider taking corticosteroids. This medication works by reducing the activity of the body's immune system. It also decreases inflammation by reducing the production of inflammatory chemicals to lessen tissue damage. These can be taken orally or can be injected through a vein. The most common corticosteroids are Hydrocortisone, Prednisone and Fludrocortisone.

Once the inflammation subsides, the liver cells will start to regenerate, therefore decreasing the release of SGPT into the bloodstream.

Talk to your doctor about starting corticosteroids. No medication should be started without a doctor's approval.

Take antiviral medications. The liver may have infection caused by a virus, such as what happens in hepatitis. Upon conducting a blood test, your physician will know what virus is the underlying cause of the infection and will prescribe antiviral medications such as Entecavir, Sofosbuvir, Telaprevir and others.

This works in the same manner as corticosteroids. Once the infection is eradicated, the liver cells will start to regenerate, therefore decreasing the release of SGPT into the bloodstream.

Consider taking herbal supplements. Lifestyle medications paired with herbal supplements may help lower SGPT levels. Talk to your doctor to see if any of these is safe and appropriate for you. Possible supplements to consider are the following:

Milk thistle. Prevents and repairs liver damage from toxic chemicals and harmful medications. It's available in 100mg to 1000mg forms. The standard dosage of milk thistle is 200 mg 2 to 3 times a day.[6]

Inositol. Helps the liver in breaking down the fats. However, this can cause abdominal pain and diarrhea. It's available in 500mg and 1000mg forms. You can take 500mg thrice daily.

Burdock root. Helps in cleansing the liver and prevents further liver damage. It's available in 500mg to 1000mg forms. You can take 500mg thrice daily.

Talk to your doctor about taking interferons. These are proteins released by the body's host cells as a response to the presence of foreign bodies such as viruses, bacteria, tumor cells, or parasites. Taking this medication triggers the protective defenses of the body's immune system to kill these foreign bodies.

SGPT starts decreasing once the infection is eradicated. The liver cells will start to regenerate, regularizing your levels. With new cells, SGPT cannot leak into your bloodstream.

Get a blood sample taken. Your level of SGPT is measurable through a blood sample. In case of acute liver damage, SGPT levels rise dramatically as it is now able to leak through cell walls into your blood. However, a rise in SGPT levels must be verified carefully because it may be elevated due to recently performing strenuous activities or exercises.

An elevation in SGPT's level is not a confirmation of a diagnosis of damage to the liver. It must be used together with the other types of liver tests in order to verify whether a patient really suffers from damage to the liver.

## 9. RELATION OF DIABETES AND LIVER DISEASE:

- In Diabetic Patients, The Normal Level of SGPT AND SGOT may Increase than the Chances of Liver Disease.
- In Liver Disease patients, The Normal Level of SGPT AND SGOT Increase than the Chances of Diabetes.

**10. CONCLUSION:** In My Study I concluded that in diabetic patients SGPT and SGOT enzyme level play a Main role. The Normal Level of SGPT AND SGOT may Increase than the Chances of Liver Disease. In Liver Disease patients, The Normal Level of SGPT AND SGOT Increase than the Chances of Diabetes

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