



Case Study on Patient with Juvenile Diabetes

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ABSTRACT: Juvenile diabetes is one of the most popular non-communicable chronic diseases in the whole world. It is also known as type 1 diabetic Mellitus. As compare to type 2 it spread more among children rather than adult people. Children from the age group of 10 to 16 get more affected by juvenile diabetes. In juvenile diabetes, the insulin level of the person gets increased that increased the blood sugar level of the person. It attacks to the eye vision as well as the nervous system of the people. Stress is the most common symptom found in this chronic disease. It is quite difficult to cure this disease with medicine as it can only be managed. Yoga is an ancient Indian science that is used as a therapy for various diseases. Proper yoga and exercises help in managing juvenile diabetes. Performing various asana and pranayama helps in smoothing the function of the insulin as well as it helps in maintain the blood sugar level. Yoga therapy helps in improving the status of diabetes by reducing the drug doses and aerobic exercises help in the prevention of complications.

Key words: Diabetes, Yoga, Diet, Naturopathy.

INTRODUCTION:

Juvenile diabetes (type1) is a condition in which immune system destroys insulin making cells in pancreas. These are called beta cells. The condition is usually diagnosed in children and young people, so it used to be called juvenile diabetes. A condition called secondary diabetes is like type 1, but your beta cells are wiped out by something else, like a disease or an injury to your pancreas, rather than by your immune system¹.

Both of these are different from type 2 diabetes, in which your body doesn't respond to insulin the way it should. Insulin-dependent diabetes mellitus (IDDM) is a lifelong metabolic disorder requiring a complex treatment regimen of diet, exercise, and insulin by injection to achieve a normal metabolic state. Although current treatments have greatly improved the health status of people with IDDM, this condition remains associated with significant morbidity and mortality².

IDDM is also the third most common chronic condition in young people under 16 years, after asthma and cerebral palsy (Betts, Buckley, Davies, McEvilly, & Swift, 1996). In light of its high prevalence and severity, it is not surprising that this condition has become the subject of considerable research from diverse clinical and scientific domains³.

Types of type 1 diabetes:

Type 1A (immune mediated) and type 1B (idiopathic)

Diabetes signs and symptoms may include⁴:

Extreme thirst

Increased hunger (especially after eating)

Dry mouth

Upset stomach and vomiting

Frequent urination

Unexplained weight loss, even though you're eating and feel hungry

Fatigue

Blurry vision

Heavy, labored breathing (your doctor may call this Kussmaul respiration)

Frequent infections of your skin, urinary tract, or vagina

Crankiness or mood changes

Bedwetting in a child who's been dry at night.

CAUSES:

Insulin is a hormone that helps move sugar, or glucose, into your body's tissues. Your cells use it as fuel ⁵.

Damage to beta cells from type 1 diabetes throws the process off. Glucose doesn't move into your cells because insulin isn't there to do the job. Instead, it builds up in your blood, and your cells starve. This causes high blood sugar, which can lead to:

Dehydration. When there's extra sugar in your blood, you pee more. That's your body's way of getting rid of it. A large amount of water goes out with that urine, causing your body to dry out.

Weight loss. The glucose that goes out when you pee takes calories with it. That's why many people with high blood sugar lose weight. Dehydration also plays a part.

Diabetic ketoacidosis (DKA). If your body can't get enough glucose for fuel, it breaks down fat cells instead. This creates chemicals called ketones. Your liver releases the sugar it stores to help out. But your body can't use it without insulin, so it builds up in your blood, along with the acidic ketones. This mix of extra glucose, dehydration, and acid buildup is known as ketoacidosis and can be life-threatening if not treated right away.

Damage to your body. Over time, high glucose levels in your blood can harm the nerves and small blood vessels in your eyes, kidneys, and heart. They can also make you more likely to get hardened arteries, or atherosclerosis, which can lead to heart attacks and strokes.

There's no way to prevent type 1 diabetes. Doctors don't know all the things that cause it. But they know that your genes play a role.

They also know that you can get type 1 diabetes when something around you, like a virus, tells your immune system to go after your pancreas. Most people with type 1 diabetes have signs of this attack, called autoantibodies. They're there in almost everyone who has the condition when their blood sugar is high.

Complications ⁶:

Cardiovascular disease. Diabetes can put you at higher risk of blood clots, as well as high blood pressure and cholesterol. These can lead to chest pain, heart attack, stroke, or heart failure.

Skin problems fungal infections..

Gum disease. mouth problems.

Pregnancy problems. Wome early delivery, birth defects, stillbirth, and preeclampsia.

Retinopathy. This eye problem

Kidney damage. nephropathy.

Poor blood flow and nerve damage.

Case presentation:

A 12 years old male child patient studying in a school in Delhi came with the following problems such as fatigue, unintended weight loss, extreme hunger and frequent urination. While examine we found her B.P. is 110/80mmHg and weight 28 kg.

Intervention: Patient practiced yoga therapy session of one hour for 6 days per week for 45 days including loosening exercises, Asanas, Pranayamas, Meditation and Kriyas and followed diet and natural remedies which is advised during consultation.

Duration: 45 days

Frequency: One hour yogic practices for 6 days a week followed by proper dietary regimen.

Yoga Intervention:

Yogic Sukshma Vyayama: 10 min.
 Yogic Sthula Vyayama: 5 min.
 Suryanamaskara: 3 rounds / 5 min.
 Asanas: 15 min.
 Tadasana (Mountain Pose) – 2 rounds / 1 min.
 Trikonasana (Triangle Pose)- 3 rounds / 2min.
 Paschimottanasana (Seated forward bend)- 2 round / 1min.
 Bhujangasana (Cobra Pose)- 3 rounds / 2min
 Shavasana (Corpse Pose)- 1 rounds / 2min.
 Vajrasana -(Thunder bolt pose}- 1 rounds / 1min.
 Pawanmuktasana (Wind relieving pose}- 2 rounds / 1min.
 Padmasana (Lotus pose)- 1 round / 1min.
 Sarvagasana (Supported shoulder stand pose)- 1 round / 1min.
 Matsyasana (Fish pose)- 1 round / 1min.
 Sukhasana (Pleasant pose)- 1round / 2min.

Pranayama:

Anulom-vilom p. – 9 rounds / 3min.
 Bhramari p. – 5 rounds / 3min.
 Bhastrika p. – 3rounds / 2min.
 Kapalbhati – 3rounds / 2min.

Special Technique: Yognidra (10 min.)

Meditation: Transcendental meditation focusing on the affected part. (5 min.)

Kriyas: Jalneti (weekly once)

Naturopathy treatment at home: Hot and cold fomentation over abdomen, wet abdomen pack, sun bath,drink water twice a day kept in brown bottle and exposed to sun rays.

Dietary Regimen: Advised to eat plenty of nonstarchy vegetables such as lettuce, kale, cabbage,spinach,mushrooms,broccoli and cauliflower etc.,include nuts,seeds, and beans in meal, even advised to take healthful protein foods ,oil such as olive oil,fruits like blackberries,strawberries etc.

Foods to avoid or limit include: Added sugars,refined grains such as white bread, pasta, and rice, processed foods, sugary breakfast cereal sweet treats - such as cakes, biscuits, pastries, diet soda, and other sugary drinks, juice drinks, fried foods and food high in saturated and trans fats,alcoholic beverages etc.

Objective data:

Patient has followed prescribed yoga practice with lifestyle modification for one and half months. He provided the following information:

Fatigue- overcome by fatigue and became more energetic

Weight – gain little weight

Urination – frequency of passing urine reduced

Hunger – eating behaviour is totally changed and improved

Irritation – more comfortable and calm compare to previous condition

Insulin dosage- reduced by regulation of blood glucose level.

General examination results:

Weight –28kg, BP- 110/80mmHg

Discussion:

A 12 years old male child patient studying in a school in Delhi came with the following problems such as fatigue, unintended weight loss, extreme hunger and frequent urination. While examine we found his B.P. 110/80mmHg and weight 28 kg. He wanted to reverse back with his problem without any allopathy intervention and get back to positive mental health. Juvenile diabetes (type 1) is a condition in which immune system destroys insulin making cells in pancreas. This patient was suffering from last so many years. This affected his mental health & stamina. Then patient took intervention of yoga & naturopathy followed by proper dietary regimen and improved his mental health and diabetes associated symptoms.

Review of literature:

Effect of yoga on plasma glucose, lipid profile, blood pressure and insulin requirement in a patient with type 1 diabetes mellitus. This case study shows (2021). a better reduction in the plasma glucose levels, lipid profile, blood pressure and insulin dose and an increase in hemoglobin levels with no episodes of hypoglycemia after yoga⁷.

This Review(2017) Exercise management in type 1 diabetes: a consensus statement. Lancet Diabetes Endocrinol provides an up-to-date consensus on exercise management for individuals with type 1 diabetes who exercise regularly, including glucose targets for safe and effective exercise, and nutritional and insulin dose adjustments to protect against exercise-related glucose excursions⁸.

Conclusion:

Regular yogic practices and dietary regimen with proper medical counseling and guidance helped patient regain physical and mental health compare to previous condition. In this case study, we have seen the effect of yoga and dietary regimen on juvenile diabetes. Yoga and exercise have a positive impact on the health of juvenile patient. It has been concluded juvenile diabetes is more common among the children age group between 10 to 16 as compared to an adult. The reasons found for juvenile diabetes among the children are family history, changing lifestyle as well as bad food habits. Most of the children spent their time on the computer, smart phone, laptop as well as television. This has increased the blood sugar level of the children. Performing yoga and exercise helps in improving the metabolic activities among the children as well as reducing the blood sugar level. In this case study, it has been found that patient who were performing yoga and following naturopathy treatment and advised diet got a lot of benefits. In this case patient experienced the satisfaction within 45 days of regular yoga practice and his investigation reports supported the results.

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