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Case Report

세포교정영양요법(OCNT)을 이용한 고혈당 개선 사례

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A Case Report on the Improvement of Hyperglycemia Using Ortho-Cellular Nutrition Therapy (OCNT)

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ABSTRACT

Objective: Blood sugar is essential for maintaining normal bodily functions and must be regulated within a certain range. However, the number of patients exhibiting abnormal blood sugar levels is increasing, becoming a significant public health issue. In this case report, Ortho-Cellular Nutrition Therapy (OCNT) was administered to a patient struggling with blood sugar co, to improve blood sugar levels and overall health status.

Case Report: A 72-year-old male patient was diagnosed with hyperglycemia and hypertension 20 years ago and had been consistently taking prescribed medications. However, the treatment effects were limited, with his glycated hemoglobin (HbA1c) level at 9%. Accordingly, OCNT—composed of bitter melon extract, alpha-linolenic acid, antioxidants, and other components—was administered for approximately 21 months. As a result, his HbA1c level improved to 6.2%, within the normal range, and his chronic fatigue, weakness, and other daily health discomforts were alleviated.

Conclusion: Although insulin therapy is recommended for patients who have difficulty controlling blood sugar with standard treatment alone, many patients are reluctant to undergo insulin therapy. OCNT can be utilized as an adjunct treatment strategy for such patients and is expected to have a meaningful effect on improving hyperglycemia.

Keywords Ortho-Cellular Nutrition Therapy (OCNT), hyperglycemia, glycated hemoglobin, diabetes

Introduction

Blood sugar refers to the concentration of glucose in the blood. The body strictly regulates blood sugar levels as part of metabolic homeostasis. In a 70 kg adult, approximately 4 grams of dissolved glucose are maintained in the plasma. Glucose that is not circulating in the blood is stored in skeletal muscle and liver cells in the form of glycogen.[1] During fasting, glucose is released from glycogen stores in the liver and skeletal muscles to maintain blood sugar homeostasis. Cellular glucose uptake is primarily regulated by insulin, a hormone produced by the pancreas. Once glucose enters the cells, it undergoes glycolysis to be used as an energy source. Properly maintained blood sugar levels are essential for the normal function of various organs, including the brain. However, persistently elevated blood sugar levels cause glucose toxicity, leading to cellular dysfunction and pathological conditions such as diabetic complications. Abnormally high blood sugar levels are referred to as hyperglycemia, while abnormally low blood sugar levels are called hypoglycemia.

The extent and duration of elevated blood sugar levels determine the degree to which glucose binds to hemoglobin, forming what is known as glycated hemoglobin (HbA1c). Glycated hemoglobin increases reactive free radicals within blood cells, altering the properties of cell membranes. This can lead to blood cell aggregation and increased blood viscosity, potentially causing impaired blood flow.[2] Additionally, glycated hemoglobin serves as a marker of the state of hyperglycemia. An HbA1c level exceeding 6.4% is used for diagnosing diabetes or other endocrine disorders.

According to current treatment guidelines, insulin therapy—either alone or in combination—is recommended when blood sugar control fails despite the use of three or more hypoglycemic agents with different mechanisms of action.[3] For example, the combination of metformin and insulin has been reported to reduce HbA1c by an average of 2.5%. However, many patients with type 2 diabetes are reluctant to undergo

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insulin treatment due to factors such as injection pain, hypoglycemia, weight gain, and negative perceptions of insulin.[4] Therefore, more acceptable alternative treatment strategies are needed.

The subject of this case study was diagnosed with hyperglycemia and hypertension 20 years ago and experienced difficulties in daily life due to chronic fatigue, weakness, numbness in the hands and feet, and vision impairment. In August 2023, laboratory tests showed an HbA1c level of 9.0%, and despite taking diabetes medication, blood sugar remained uncontrolled, leading to a recommendation for insulin injections. Accordingly, this case study reports the course of blood sugar improvement following the application of Ortho-Cellular Nutrition Therapy (OCNT) to the patient.

Case Study

1. Subject
This case study involved a patient with hyperglycemia.

1) Name: Seok OO (72 years old, M)
2) Diagnosis: Hyperglycemia
3) Date of onset: August 26, 2023 (with over 20 years of hypertension and hyperglycemia)
4) Treatment period: August 26, 2023 – Present
5) Chief complaints: Chronic fatigue, weakness, numbness in hands and feet, vision impairment, heartburn
6) Medical history: None
7) Social history: Smoking (20 cigarettes per day), Alcohol consumption (1 bottle three times a week)
8) Family history: Lung cancer (maternal side)
9) Current illness and medications: Hypertension, hyperlipidemia, hyperglycemia. Current medications are as follows: Trubuddy Tab. 10/15 (antidiabetic), Lodient Tab. 80/5 (antihypertensive), Roeze Tab. 10/5 (antilipidemic), Cloart Tab. (antithrombotic), Thiometa Tab. 480 (diabetic neuropathy), Yuhan Metformin HCl Tab. 750 (antidiabetic). Diaryl 4 mg was previously taken as an antidiabetic medication but is currently discontinued.

2. Method
• September to November 2023
Cyaplex X Granules (101, twice a day, one sachet per dose)
Haepobooster F Granules (101, twice a day, one sachet per dose)
Momoplex Granules (101, twice a day, one sachet per dose)
Aqua SAC Pure (100, once a day, one sachet per dose)
Diverol Capsules (100, once a day, one capsules per dose)
Additionally, the patient was advised to quit smoking.

• December 2023 to November 2024
Momoplex Granules (100, once a day, one sachet per dose)
Alternating monthly intake of Vivarol Capsules, Tmplex Capsules, Viva Kan Capsules, Vivapherol Capsules, and Viva Q10 Capsules.

• December 2024 to Present
Momoplex Granules (100, once a day, one sachet per dose)
Vivarol Capsules (200, once a day, two capsules per dose)
The patient adhered to alcohol abstinence, exercise, and dietary therapy.

Results

In an August 2023 blood test, the patient's HbA1c level was measured at 9.0%. Following approximately three months of combined OCNT and smoking cessation from September to November 2023, the HbA1c level decreased to 7.5%. Subsequently, from December 2023 to November 2024, the patient continued OCNT for about one year, using a continuous glucose monitor to track real-time blood sugar fluctuations. During this period, the average HbA1c stabilized around 7.0%. From December 2024 onward, with the addition of alcohol abstinence, exercise, and dietary therapy alongside OCNT, the patient's HbA1c has been maintained within the 6.0 to 6.4% range (Fig. 1). The patient reported overall improvements in health status and quality of life, expressing a high level of satisfaction with the treatment.

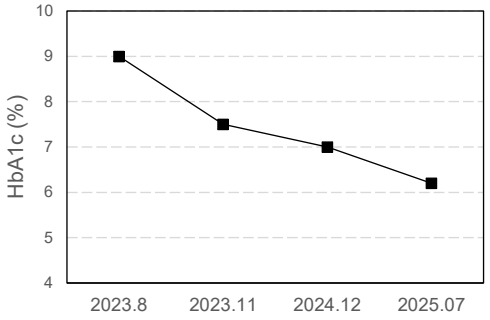

Fig. 1. Changes in the patient's HbA1c level following OCNT. Starting at 9.0% in August 2023, the level gradually improved to 7.5% in November 2023, 7.0% in December 2024, and 6.2% in July 2025.

Discussion

This case study demonstrates that OCNT contributed to lowering blood sugar levels as an adjunctive treatment in a hyperglycemic patient who had not achieved treatment goals despite conventional antidiabetic medication. Patients with hypertension, hyperlipidemia, and hyperglycemia are generally classified as having metabolic syndrome. In this high-risk patient, long-term application of OCNT resulted in an approximately 2.8% reduction in HbA1c, bringing it back to the normal range without observed side effects. Additionally, the patient's primary complaints, such as chronic fatigue and weakness, were alleviated.

The medications taken by the patient—Trubuddy, metformin, and glimepiride—regulate blood sugar by acting as a GLP-1 receptor agonist, inhibiting hepatic glucose production, and increasing insulin secretion and sensitivity, respectively. However, individual responses to hypoglycemic agents vary due to factors such as β-cell function, renal function, liver metabolism capacity, dietary habits, body weight, and genetic differences. For patients with limited treatment response, the intake of Momoplex, which contains bitter melon extract, may help lower blood sugar levels. The mcIRBP-19-BGE compound found in bitter melon has shown significant reductions in fasting blood sugar and glycated hemoglobin in patient groups unresponsive to antidiabetic drugs.[5] Additionally, bitter melon extract has been reported to reduce average fasting blood sugar levels without causing serious adverse effects during the administration period.[6]

Therefore, it is possible that Momoplex contributed to blood sugar reduction in patients with limited options for effective medication.

Prostaglandin E3 (PGE3) is a type of eicosanoid derived from eicosapentaenoic acid (EPA), an omega-3 fatty acid. It is considered to potentially influence insulin secretion and sensitivity. Specifically, although PGE3 has a weaker effect on reducing insulin secretion compared to PGE2, increasing EPA levels in the pancreatic islet cell membrane decreases PGE2 and increases PGE3, which is believed to improve beta-cell function and glucose tolerance in diabetes models. In vitro studies have reported that EPA increases insulin secretion capacity by 30% in pancreatic cells of a diabetes-induced obese mouse model and significantly raises PGE3 levels. From this perspective, the intake of alpha-linolenic acid through Vivarol and Diverol may have antidiabetic effects. Consumption of alpha-linolenic acid has been shown to increase plasma EPA levels.[8] Therefore, alpha-linolenic acid intake may help reduce the patient's insulin resistance and improve insulin secretion capacity.

Additionally, antioxidant intake is crucial in protecting cells from oxidative stress induced by high glycated hemoglobin levels. Alpha-tocopherol and anthocyanins function as antioxidants by inhibiting lipid peroxidation and enhancing resistance to oxidative stress in retinal pigment epithelial cells.[9] In particular, alpha-tocopherol has been reported to improve retinal blood flow in diabetic retinopathy.[10] Therefore, supplementing antioxidant capacity through Vivapherol and Cyaplex X may help with vision impairment.

Taurine contributes to the maintenance of intracellular calcium homeostasis, mitochondrial stabilization, and the promotion of ATP production.[11] Therefore, taurine and calcium supplementation through Haepobooster and Aqua SAC may help regulate mitochondrial Ca^{2+} accumulation and enhance ATP-dependent Ca^{2+} uptake, thereby stabilizing mitochondrial membrane potential and function, which can improve cellular energy deficiency, one of the physiological causes of energy depletion.

This case study, as a single case, has limitations in terms of generalizability; however, it suggests that OCNT may have served as an adjunctive treatment for a patient whose blood sugar was difficult to control with conventional medication alone, resulting in improved glycated hemoglobin levels and enhanced quality of life. Accordingly, this case study is reported with the patient's voluntary consent.

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