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Case Report

세포교정영양요법(OCNT)을 이용한 류마티스 관절염 및 고지혈증 개선 사례

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A Case Report on the Improvement of Rheumatoid Arthritis and Hyperlipidemia Using Ortho-Cellular Nutrition Therapy (OCNT)

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ABSTRACT

Objective: Rheumatoid arthritis (RA) is an immune-mediated inflammatory disease characterized by chronic joint inflammation resulting from immune dysregulation, with systemic effects including functional decline, increased cardiovascular risk, and metabolic disruption. Abnormal cholesterol levels have been reported to be associated with systemic inflammatory activity, underscoring the importance of lipid management as a critical component of comprehensive RA care.

Case Report: A Korean woman in her fifties, diagnosed with RA at a tertiary referral hospital and on regular follow-up with prescribed medication, was incidentally found to have abnormal cholesterol levels and sought improvement in both her RA-related symptoms and lipid profile. She was prescribed Ortho-Cellular Nutrition Therapy (OCNT) comprising anthocyanins, omega-3 fatty acids, methylsulfonylmethane (MSM), chlorella, vitamins and trace minerals, collagen, red yeast rice extract, and milk thistle extract. Following the intervention, no RA-related abnormalities were detected on subsequent follow-up, and cholesterol levels returned to within the normal range.

Conclusion: Although limited by its single-patient design, these findings are clinically meaningful, as regular follow-up confirmed the absence of RA-related abnormalities, demonstrated significant cholesterol improvement, and suggested the potential of OCNT to enhance quality of life in patients with RA and hyperlipidemia.

Keywords Ortho-Cellular Nutrition Therapy (OCNT), Rheumatoid arthritis, Hyperlipidemia, Immune-mediated inflammatory disease, Autoimmunity

Introduction

Immune-mediated inflammatory diseases (IMIDs) are a group of disorders in which dysregulation of normal immune responses leads to autoimmunity and subsequent aberrant inflammatory reactions. Representative IMIDs include Crohn's disease, ulcerative colitis, rheumatoid arthritis(RA), psoriatic arthritis, and axial spondyloarthritis. These conditions commonly affect tissues that are inherently exposed to diverse mechanical and chemical stimuli, such as the gastrointestinal tract and joints, and are characterized by microenvironments that are particularly susceptible to inflammation because of the continuous need to maintain immune homeostasis. Notably, the inflammatory responses observed in IMIDs are not confined to the primary site of pathology but may also exert systemic effects, influencing other organs and disrupting broader metabolic functions.[1]

RA is a form of IMID affecting multiple joint sites throughout the body, with joint swelling, stiffness, and tenderness representing its cardinal clinical manifestations. The disease arises from a complex interplay of genetic and environmental factors, whereby immune dysregulation initially occurring at mucosal surfaces progressively influences the inflammatory state of the joints over time. Furthermore, RA is known to extend beyond the articular compartment, affecting extra-articular organs such as the eyes, lungs, and cardiovascular system, as well as engaging systemic metabolic processes, thereby giving rise to symptoms including systemic fatigue and functional decline.[2]

Further examining the relationship between rheumatoid arthritis (RA) and cardiovascular function, patients with RA are

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known to have a significantly increased risk of myocardial infarction, comparable to that observed in patients with type 2 diabetes. Inflammatory activity associated with RA has been implicated as a contributing factor and has also been reported to affect lipid metabolism in these patients. Specifically, alterations in triglyceride and low-density lipoprotein (LDL) cholesterol levels, as well as changes in high-density lipoprotein (HDL) cholesterol function, have been reported. Given that RA and hyperlipidemia share a common pathophysiological basis rooted in immune-mediated inflammatory responses, effective regulation of this inflammatory activity may have meaningful effects on symptom improvement and prognosis in both conditions.[3]

The patient in this case had been diagnosed with RA and was receiving relevant pharmacological treatment, during which hyperlipidemia was identified through laboratory assessments, prompting her desire for its improvement. Accordingly, Ortho-Cellular Nutrition Therapy (OCNT) was applied, following which significant improvements were observed in RA-related symptoms as well as lipid and cholesterol levels. This case is hereby reported with the informed consent of the patient.

Case Study

1. Subject

A single patient diagnosed with RA and hyperlipidemia was included in this study.

1) Name: O OO (55 years old / F)
2) Diagnosis: Rheumatoid athritis, Hyperlipidemia
3) Date of onset: August 2023
4) Treatment period: October 2023 – Present
5) Chief complaint: Hand pain and numbness
6) Past medical history: None
7) Social history: Reports severe psychological stress
8) Family history: None
9) Present illness and current medications: Currently receiving pharmacological treatment for RA

2. Methods

The OCNT regimen prescribed to the patient is described in detail in Table 1.

Table 1. OCNT regimen prescribed to the patient.

Duration of administration / Prescription details	Before initial examination in February 2024	February 2024 – August 2024	August 2024 – February 2025	February 2025 – August 2025	August 2025 – February 2026	February 2026 – Present
Cyaplex X granules	101*	-	101	101*	101*	101
Cyaplex F capsules	303*	303	-	303*	-	-
Cyaplex F granules	-	-	-	-	100*	-
Eufaplex Alpha stick	101	101	100	100	100	100
Thyroplex F granules	100	100	100	100	100	-
Gastron granules	202	-	202	202	202**	-
Gastron Speed liquid	-	-	-	-	100**	-
Heartberry black	100	-	-	-	-	-
Aqua SAC pure	100	100	-	-	100	100
Cyaplex mineral rock salt	100	-	-	-	-	-
Bioplex F granules	001	001	001	-	001	-
Nutaplex granules	101	-	-	101	101	101
Tmplex granules	010	010	010	010	010	010
Sulfoplex F powder	010	010	010	010	010	010
Lipotron M capsules	-	-	020	020	020	-
Monacol capsules	-	-	002	002	002	-
Haepobooster F granules	-	-	001	-	-	-
Calmaplex granules	-	-	-	001	001	-
Collaplex granules	-	-	-	001***	-	-
Collaplex Derma Speed liquid	-	-	-	001***	001	001
Diverol capsules	-	-	-	010	-	-
Diverol F capsules	-	-	-	-	010	010
Jubaplex F granules	-	-	-	001	-	-
Epibiome F granules	-	-	-	100	-	-
Vivacell C capsules	-	-	-	-	010	010
Bifido Sanyacho liquid	-	-	-	-	100	-
Viva circu capsules	-	-	-	-	001	001
Caroplex capsules	-	-	-	-	020	020
NMNplex 1000	-	-	-	-	100	-
Viva kan capsules	-	-	-	001	001	-
Hepatop capsules	-	-	-	-	-	001

*, **, *** Formulation adjustments were made within the same administration period in consideration of the patient's condition and circumstances.

† Numbers indicate the number of pouches/capsules taken in the order of morning, lunch, and evening; 0 indicates no administration.

Results

Following her diagnosis with RA, the patient had been undergoing blood tests at a tertiary referral hospital at six-month intervals beginning in February 2024. The results revealed a mildly decreased neutrophil count in February 2024. However, subsequent testing in August 2024 yielded normal findings. No abnormalities were identified in other RA-related laboratory indices throughout this period. Meanwhile, total cholesterol and LDL cholesterol levels were found to exceed the normal range in the August 2024 assessment, but returned to within the normal range at the following examination in February 2025. (Fig. 1.)

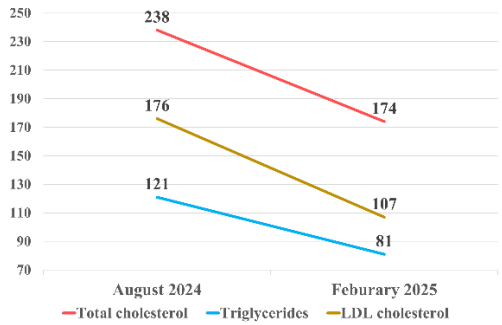

Fig. 1. Graph illustrating total cholesterol, triglyceride, and LDL cholesterol levels from the patient's examination results.
* Normal reference values for each index: total cholesterol below 200 mg/dL, triglycerides below 150 mg/dL, and LDL cholesterol below 100 mg/dL.

Discussion

The patient in this case was a Korean woman in her fifties who had been diagnosed with RA at a tertiary referral hospital. She was instructed to continue taking the prescribed medication and to undergo periodic blood tests to monitor her clinical course. However, the patient expressed marked anxiety and reluctance regarding the use of the prescribed medication. She also reported experiencing severe stress in daily life and stated that this had made it difficult for her to regulate her eating habits.

Based on these findings, it was determined that severe stress had caused dysregulation of the immune system, which was considered to have contributed to the onset and exacerbation of RA. Furthermore, the patient expressed a desire not only to alleviate RA-related discomfort but also to improve her cholesterol levels, and OCNT was accordingly prescribed to address these goals. At this time, the following four points were established as the main therapeutic considerations.

1. Prescription of nutrients to enhance anti-inflammatory and antioxidant functions
2. Prescription of nutrients to modulate immune responses
3. Prescription of nutrients to supplement joint and bone components
4. Prescription of nutrients to improve cholesterol levels and support hepatic function as an adjunctive measure

First, nutrients intended to improve anti-inflammatory function were prescribed, including Cyaplex, Gastron, and Sulfoplex. Cyaplex contains anthocyanins as its main active ingredient, which are a class of flavonoids abundantly found in fruits and vegetables. Anthocyanins have been shown to help prevent cellular damage induced by reactive oxygen species and to be involved in the regulation of the expression of inflammatory signaling pathways such as NF-κB and MAPKs, inflammatory mediators such as TNF-α and IL-6, and inflammation-related enzymes such as iNOS and COX-2, thereby helping to control overall inflammatory responses.[4]

Gastron contains fermented soybean powder and licorice extract, with isoflavones and glycyrrhizin, respectively, identified as the active components involved in modulating inflammatory responses in the body. Isoflavones have been shown to exert broad anti-inflammatory effects through the suppression of NF-κB, iNOS, and COX-2, whereas glycyrrhizin has been reported to regulate overall inflammatory activity by reducing the production of inflammatory mediators.[5,6] Sulfoplex contains methylsulfonylmethane (MSM), which is a type of organic sulfur compound. This component is known to exert free radical-scavenging and oxidative stress-attenuating effects at the joint level and has been reported to help alleviate functional impairment through its anti-inflammatory activity.[7]

To reinforce antioxidant function, Nutaplex, Tmplex, Thyroflex, Lipotron M, and Vivacell C were prescribed. Regarding the primary active ingredients of these products, Nutaflex contains chlorella extract, Tmflex contains trace minerals including selenium, zinc, and manganese, Vivacell C contains vitamin C, and Lipotron M contains vitamins B and E. These components can be classified as those that act directly and those that act indirectly, according to their antioxidant mechanisms. Vitamin C, vitamin E, and chlorella can directly contribute to antioxidant function by scavenging reactive oxygen species or free radicals and by eliminating peroxy radicals. In contrast, B vitamins, iodine, zinc, and manganese can indirectly contribute to enhanced antioxidant function by serving as cofactors for enzymes that support these actions or by facilitating overall metabolic function.[8-10]

To help improve the patient's ability to regulate immune responses, selenium and vitamin D were utilized. Selenium is a trace mineral that is converted in the body into selenoproteins and is involved in antioxidant activity and various physiological functions. These selenoproteins help support the phagocytic activity and cellular migration of macrophages and neutrophils, as well as the proliferation and differentiation of T cells, thereby contributing to the regulation of overall immune balance.[11] Vitamin D, on the other hand, may positively influence immune homeostasis by inducing the production of antimicrobial peptides and reinforcing barrier defense function, thereby enhancing the body's ability to respond to initial infection, as well as by promoting immune balance centered on regulatory T cells.[12] These components were intended to be supplied through Tmplex and Diverol, respectively.

The OCNT regimen was also formulated to supplement the structural components of the patient's joints and bones and to support overall skeletal function. Calcium, vitamin D, and collagen were utilized for this purpose. Calcium is one of the most abundant minerals in the human body, and more than 99% of the body's calcium is utilized in bone formation. As a key component in skeletal mineralization and the maintenance of bone strength, adequate calcium intake is considered essential for bone health. It has been reported that concurrent intake of vitamin D significantly enhances intestinal calcium absorption, resulting in increased calcium levels and improved bioavailability in the body.[13,14] In addition, collagen supplementation is absorbed in peptide form after ingestion and digestion, and once it reaches the joint site, it has been shown to support chondrocyte activity and cartilage matrix synthesis,

thereby exerting a positive effect on the overall integrity of the joint environment.[15] These components were supplied through Aqua SAC Pure, Calmaplex, and Collaplex.

Finally, nutrients were prescribed to support lipid and cholesterol metabolism in the patient. Although attenuating systemic inflammatory activity is important for improving elevated cholesterol levels, the concurrent prescription of nutrients that influence overall lipid metabolism may also be an effective therapeutic approach. In addition, hepatic metabolic function is known to be closely associated with cholesterol levels.[16] Accordingly, Eufaplex, Monacol, Bioplex, Viva kan, and Hepatop were prescribed to support overall cholesterol regulation and improve hepatic function.

Eufaplex contains omega-3 and omega-6 fatty acids, including alpha-linolenic acid and linoleic acid, which are abundantly found in vegetable oils. These components are essential fatty acids required for lipid metabolism and promote the utilization of fatty acids present in the body as energy sources through the process of lipid metabolism. This process has been reported to exert a significant influence on the regulation of overall triglyceride and cholesterol levels.[17] Monacol contains red yeast rice extract as its primary active ingredient. Red yeast rice is a type of fermented grain produced by fermenting rice with yeast. Its active component, monacolin K, is known to be structurally identical to lovastatin, one of the pharmacological agents used in the treatment of hyperlipidemia, and multiple randomized controlled trials and meta-analyses have reported reductions in LDL cholesterol levels in groups receiving red yeast rice supplementation.[18] Bioplex is rich in dietary fiber extracted from various plants, including oats and psyllium husk. A meta-analysis of controlled studies investigating the efficacy of this component demonstrated that it significantly reduced total cholesterol and LDL cholesterol levels and helped reduce the overall risk of cardiovascular disease.[19]

The component utilized to support hepatic function was silymarin. This compound is extracted from milk thistle, a plant belonging to the *Asteraceae* family, and is known to help reduce hepatic inflammation and oxidative stress, as well as to exert a positive effect on the inhibition of hepatic fibrosis. A meta-analysis of clinical trials using this component confirmed that ALT and AST levels, which are markers of liver enzyme activity, were significantly reduced in groups receiving milk thistle supplementation. This component was intended to be supplied through Viva kan and Hepatop.[20]

Through the described OCNT regimen, the patient showed no RA-related abnormalities on serial health examinations, and total cholesterol and LDL cholesterol levels, which had previously shown abnormal findings during follow-up, also demonstrated improvement to within the normal range. The patient has continued to express a desire to maintain OCNT, and it is planned to continue the OCNT prescription while monitoring her clinical course. However, because this case report involved a single patient, there are limitations to applying the same OCNT regimen to all patients with RA and hyperlipidemia, and continued observation as well as further studies involving additional cases will be necessary. Nevertheless, it is meaningful that an appropriately tailored OCNT prescription based on the patient's health status and preferences may promote overall health improvement and contribute to the restoration of quality of life. This case is reported with the informed consent of the patient.

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