

세포교정영양요법(OCNT)을 이용한 진폐증 환자의 만성호흡곤란 개선 사례

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A Case Report on the Improvement of Chronic Dyspnea in a Patient with Pneumoconiosis Through Ortho-Cellular Nutrition Therapy (OCNT)

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ABSTRACT

Objective: Pneumoconiosis is characterized by chronic inflammatory responses triggered by the accumulation of dust and fine particulate matter in the lungs, resulting in damage to the pulmonary parenchyma and airways and potentially leading to pulmonary fibrosis over time. Patients frequently present with chronic dyspnea as the primary symptom, and the degree of pulmonary function impairment is assessed through spirometry and diffusing capacity of the lungs for carbon monoxide (DLCO) to determine disease severity. As current therapeutic approaches primarily focus on symptom control, prevention of complications, and attenuation of pulmonary function decline, clinical strategies aimed at regulating inflammation, enhancing antioxidant activity, and improving microcirculation are of considerable clinical importance.

Case Report: This case report describes a Korean male patient in his seventies who was diagnosed with Grade 1 pneumoconiosis after prolonged occupational exposure in a coal mining environment. Despite prolonged hospitalization and pharmacological treatment, his dyspnea and accompanying symptoms did not improve, and Ortho-Cellular Nutrition Therapy (OCNT) was subsequently administered. The intervention included anthocyanins, omega-3 fatty acids, radish seeds, chlorella, magnesium, and trace minerals. Following the intervention, marked improvements were observed in both dyspnea and associated symptoms.

Conclusion: As this case report was based on a single patient, there are inherent limitations in generalizing the application of OCNT to other patients with the same condition. Nevertheless, the observation of symptomatic relief in a patient with restrictive pulmonary function impairment, as seen in pneumoconiosis, is considered meaningful because it suggests the potential value of a multifaceted clinical approach to disease management.

Keywords Ortho-Cellular Nutrition Therapy (OCNT), Pneumoconiosis, Chronic dyspnea, Pulmonary function

Introduction

Pneumoconiosis is a disease characterized by chronic inflammatory responses and progressive fibrosis resulting from prolonged exposure to dust and fine particulate matter smaller than 5 μm in diameter, which accumulate in the terminal

bronchioles and alveoli. Disease severity is assessed based on the size, shape, and density of small and large opacities observed on radiological examinations such as chest X-ray and computed tomography (CT), and biopsy is performed when clinically indicated. In South Korea, disease grading additionally incorporates the degree of pulmonary function impairment, with grades assigned from 1 to 4; grades closer to 1 indicate more severe respiratory impairment that significantly interferes with activities of daily living.¹⁻³

Pneumoconiosis is known to occur commonly in individuals working in mining or construction environments, with coal dust and silica dust generated in these occupational settings considered the primary causative agents. Upon inhalation and deposition in the lungs, these particles can directly damage the pulmonary parenchyma and airway walls. In response, alveolar

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macrophages phagocytose the deposited particles and remain persistently activated. This process promotes the secretion of proinflammatory cytokines such as tumor necrosis factor-alpha (TNF- α), interleukin-1 β (IL-1 β), and interleukin-6 (IL-6), while also inducing fibroblast proliferation and collagen deposition via transforming growth factor-beta (TGF- β) signaling, ultimately leading to pulmonary fibrosis. In severe cases, these processes may result in reduced pulmonary compliance and restrictive ventilatory impairment. Furthermore, persistent activation of alveolar macrophages can increase the generation of reactive oxygen species (ROS), and the resulting oxidative stress may cause pulmonary vascular injury, thereby increasing the risk of hypoxemia and dyspnea.^{4,5}

Clinically, chronic dyspnea is the most common and burdensome symptom reported by patients with pneumoconiosis. In particular, exertional dyspnea during physical activity or strenuous exertion serves as an important indicator for evaluating pulmonary function. Pulmonary function is assessed using forced vital capacity (FVC) and diffusing capacity of the lungs for carbon monoxide (DLCO), and reductions in these parameters have been shown to be closely associated with the severity of dyspnea and decreased systemic oxygen saturation.^{6,7}

Clinical treatments capable of reversing structural fibrosis in pneumoconiosis remain extremely limited. Accordingly, current therapeutic approaches for pneumoconiosis primarily focus on symptom relief, complication management, and attenuation of pulmonary function decline. Although whole lung lavage (WLL) may be considered for the removal of airway secretions, dust, and fibrosis-related materials, evidence supporting its long-term benefits in improving pulmonary function or treating fibrosis remains insufficient. Therefore, functional improvement strategies aimed at regulating inflammation, enhancing antioxidant activity, and improving alveolar microcirculation may be of considerable clinical significance in the management of symptomatic disease.⁸

This case report describes a patient who was diagnosed with Grade 1 pneumoconiosis after prolonged coal mining work and presented with persistent dyspnea. OCNT was administered, and the patient subsequently demonstrated significant symptomatic improvement. As this case is considered meaningful for exploring the potential for functional improvement of symptoms in patients with pulmonary function impairment caused by chronic dust exposure, it is reported here with the patient's informed consent.

Case Study

1. Subject

This case report involved a single patient presenting with chronic dyspnea.

1. Name: Jang OO (79 years old/M)
2. Diagnosis: Chronic dyspnea
3. Date of onset: March 2025 (time of acute exacerbation)
4. Treatment period: April 2025 to September 2025
5. Chief complaints: Dyspnea, cough, sputum production, anxiety, and impaired judgment
6. Past medical history: Confirmed diagnosis of Grade 1 pneumoconiosis
7. Social history: Prolonged occupational exposure in a coal mining environment
8. Family history: None

9. Present illness and current medications: Long-term inpatient care under industrial accident compensation with nine respiratory medications related to pneumoconiosis

2. Methods

The details of the OCNT prescribed to the patient are presented in Table 1.

Table 1. OCNT prescribed to the patient.

Prescription Details	Session				
	1	2	3	4	5
Cyaplex X granules	101	101	101	101	101
Magplex capsules	202	202	202	202	202
Tmplex F capsules	101	101	101	101	101
Eufaplex Alpha stick	101	101	101	-	-
Nutaplex capsules	303	303	303	-	-
Nutaplex granules	-	-	-	101	101
Bovitacin LU tablets	-	-	-	202	202
Noeufa Raphanus Seed Oil	-	-	-	101	101

* 101: one sachet/capsule/tablet twice daily, in the morning and evening, 202: two sachets/capsules/tablets twice daily, in the morning and evening, 303: three sachets/capsules/tablets twice daily, in the morning and evening

Results

Prior to initiating OCNT, the patient consistently reported severe dyspnea, accompanied by cough, sputum production, and significant anxiety related to these symptoms. Approximately one month after commencing OCNT, the patient reported marked alleviation of dyspnea and its associated symptoms. After approximately five months of continuous OCNT, the patient's overall symptoms improved, and the associated anxiety was found to have resolved. The degree of symptomatic discomfort experienced by the patient during the course of OCNT is presented in detail in Table 2.

Table 2. Severity of symptoms experienced by the patient during the course of OCNT. Higher scores indicate greater symptomatic discomfort, with scores ranging from 0 to 5.

Symptom	Session				
	1	2	3	4	5
Dyspnea	5	2	1	1	1
Cough	3	2	2	1	1
Sputum	3	2	2	0	0
Impaired judgment	3	2	0	0	0
Anxiety	5	2	1	0	0
Indigestion	3	2	2	0	0

0: No symptoms and no impact on daily activities; 1: Mild symptoms with minimal impact on daily activities; 2: Noticeable symptoms requiring minor adjustments in daily activities; 3: Symptoms significantly affect daily activities, making some tasks difficult; 4: Major difficulty performing tasks during daily activities; 5: Symptoms severely interfere with daily activities, causing substantial distress

Discussion

This case report describes a male patient in his seventies who was diagnosed with Grade 1 pneumoconiosis. The patient had a

history of prolonged occupational exposure in coal mining, which led to his diagnosis of Grade 1 pneumoconiosis and subsequent long-term inpatient care at an industrial accident compensation hospital. Despite prolonged treatment with respiratory medications, his symptoms did not improve and continued to worsen. Accordingly, OCNT was applied as an interventional strategy to improve these symptoms, with a primary focus on improving pulmonary function through enhancement of antioxidant balance, regulation of inflammation, and improvement of microcirculation.

To reinforce systemic antioxidant balance, Cyaplex, Nutaplex, and Tmplex were prescribed. The primary active components included anthocyanins from Cyaplex, chlorella from Nutaplex, and a range of trace minerals from Tmplex. Reinforcing antioxidant capacity requires enhancing the body's ability to counteract oxidative stress and free radicals that affect biological molecules. Anthocyanins, which are abundantly present in berries such as aronia, are known to help stabilize free radicals and thereby reduce overall oxidative stress.⁹ Chlorella is reported to be rich in macronutrients such as proteins, as well as micronutrients including vitamin C, vitamin E, and selenium, which support antioxidant function. Through these components, chlorella is reported to contribute to the reinforcement of systemic antioxidant capacity and to exert beneficial effects on toxin elimination.¹⁰ Additionally, the trace minerals contained in Tmplex are known to support antioxidant function by contributing to the activity of antioxidant enzymes and participating in the regulation of systemic metabolism.¹¹

OCNT components aimed at supporting anti-inflammatory function were subsequently prescribed, including Eufaplex Alpha, Noeufa Raphanus seed oil, and Magplex. Eufaplex Alpha and Noeufa Raphanus seed oil are rich in plant-derived omega-3 fatty acids, which are known to modulate the phospholipid composition of cell membranes, regulate systemic metabolic responses to inflammatory stimuli, and attenuate the functional reactivity of inflammatory cells. These components may also help reduce inflammatory responses by inhibiting the production of proinflammatory cytokines such as interleukin-1 (IL-1), IL-6, and interleukin-8 (IL-8).¹² Furthermore, radish seeds, the primary raw material of Noeufa Raphanus seed oil, have been shown in *in vitro* and animal studies to help reduce overall inflammatory responses by modulating inflammatory cells and attenuating inflammatory signaling in pulmonary tissue.¹³ Magnesium was additionally prescribed to prevent the inflammatory consequences of deficiency, as insufficient magnesium levels are known to upregulate the expression of inflammation-related genes and induce immune cell hypersensitivity, thereby increasing susceptibility to exaggerated inflammatory responses.¹⁴

Furthermore, magnesium contributes to enhancing vascular endothelial barrier stability by inducing the expression of cell junction proteins such as VE-cadherin, occludin, and ZO-1, and may help reduce microvascular injury by attenuating inflammatory responses. Through these mechanisms, magnesium may be considered necessary for improving alveolar microcirculation and reinforcing overall pulmonary function.¹⁵ In addition, bovine lung-derived peptides, the primary active component of Bovitacin LU, may exert beneficial anti-inflammatory effects by reducing the production of proinflammatory cytokines such as IL-6 and IL-1 β , as well as nitric oxide, in macrophages. By suppressing inflammatory responses that may arise in the lungs, these peptides may

indirectly contribute to the improvement of overall pulmonary function and support overall functional recovery.¹⁶

Through the administration of OCNT, the patient demonstrated significant improvement in dyspnea that had previously been refractory to pharmacological treatment, along with a meaningful reduction in accompanying symptoms. As pneumoconiosis is an irreversible fibrotic pulmonary disease, symptom-oriented management rather than curative treatment constitutes the cornerstone of care. Considering these characteristics, OCNT may contribute to improving the patient's quality of life through its antioxidant and anti-inflammatory effects and enhancement of pulmonary function, while also suggesting the potential for a multifaceted clinical approach to symptom management in pneumoconiosis. However, as this case report was based on a single patient, there are inherent limitations in generalizing the application of OCNT to other patients with the same condition. Nevertheless, it is meaningful that OCNT tailored to the patient's symptoms and individual circumstances may alleviate symptomatic discomfort and improve quality of life in patients with pneumoconiosis. This case is therefore reported with the patient's informed consent.

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