

THE ROLE OF HAELAN 851®
IN ANTI-LIPID PEROXIDATION AND
THE IMPROVEMENT OF LUNG FUNCTION
RELATING TO PNEUMOCONIOSIS AND EMPHYSEMA

ABSTRACT: This paper describes the observed reduction of lipid peroxidation (LPO) in the blood serum and the improvement of lung function received by patients with pneumoconiosis who were nutritionally supplemented with Haelan 851, Platinum Formula, oral nutritional beverage. This study included 41 cases of pneumoconiosis (category 1 to 2), who were studied as the observed group, and 12 cases of pneumoconiosis observed as the control group. The results showed that the lipid peroxidation in the blood serum decreased after nutritional supplementation with Haelan 851, Platinum Formula, oral liquid. The study was conducted for a period of 60 days at which time the results showed obvious significant differences between the observed group and the control group ($p < 0.01$). The results of lung function testing showed improvement in both the MMEFR 25-75% and RV/TLC% testing of those receiving nutritional supplementation with Haelan 851, Platinum Formula, oral liquid nutritional beverage. The studies indicated that Haelan 851, Platinum Formula, oral nutritional beverage can play a role in improving lung function for those with pneumoconiosis and emphysema.

INTRODUCTION

Lipid peroxidation not only can be found in some normal physical processes but relates to many pathological processes and may explain the development of some diseases. Evidence has been presented to show that the quantity of lipid peroxide in blood serum may increase after inhaling dust and relate to the development and deterioration of pneumoconiosis.^{1, 2} Haelan 851, Platinum Formula, oral liquid contains abundant amino acids, varying vitamins, trace elements and other important dietary nutrients. Clinical studies have demonstrated that Haelan 851, Platinum Formula oral liquid increases the immunity action of the mononuclear macrophage system and may be beneficial in reducing body impairment.^{3, 4, 5} This paper reports the changes of lipid peroxidation in the blood serum and the improvement in lung function experienced by pneumoconiosis patients nutritionally supplemented with Haelan 851, Platinum Formula, oral nutritional beverage. The results of this study indicate nutritional supplementation with Haelan 851, Platinum Formula, oral liquid may produce therapeutic benefits for those with pneumoconiosis, emphysema, and other related lung deficiency problems.

METHODS AND MATERIALS

Forty one cases of pneumoconiosis volunteers (23 cases of category one and 18 cases of category two) were observed during a 60 day test period. All subjects were males ranging in age from 32

to 55 years old who were confined to a hospital throughout the study period. The nutritionally supplemented group received 200 ml per day of Haelan 851, Platinum Formula, oral liquid nutritional beverage for sixty consecutive days.

During the test period the nutritionally supplemented group was given no medications. At the same time, 12 cases of pneumoconiosis volunteers, the control group, which were the same range in ages and category of pneumoconiosis, were treated with the same food and other conditions except they were not nutritionally supplemented with the Haelan 851, Platinum Formula, oral liquid nutritional beverage.

The Satoh's method was carried out to determine the quantitative measurement of lipid peroxidation (LPO) in the blood serum.⁶ The lipid peroxidation serum tests and the pulmonary function tests were performed before and after the nutritional supplementation with Haelan 851, Platinum Formula, oral nutritional beverage. The Maximum-Mid Expiratory Forced Rate (MMEFR 25-75%) and the ratio of Residual Volume and Total Lung Capacity (RV/TLC%) were chosen to evaluate the ventilation function and degree of pulmonary emphysema.

RESULTS

1. The quantity of blood serum lipid peroxidation (LPO) in the observed group decreased after 60 days of nutritional supplementation with the Haelan 851, Platinum Formula, oral liquid. There were obvious significant differences between the before and after nutritional supplementation with the Haelan 851, Platinum Formula, oral nutritional beverage. ($P < 0.01$). The changes in blood serum lipid peroxidation (LPO) levels in the non-nutritionally supplemented control group was slight with no significant differences resulted after 60 days of hospitalization, as indicated by the before and after levels as indicated below in Table 1.

Table 1 - Changes of Blood Serum LPO Before and After Haelan 851 Nutritional, Platinum Formula, Supplementation

Group	Cases	Before	After	P Volume
Observed Group	41	4.329 ± 0.729	3.901 ± 0.634	<0.01
Control Group	12	3.945 ± 0.677	4.126 ± 0.705	>0.05

2. The ratio of residual volume was chosen to test lung function (RV/TLC%) to evaluate the degree of pulmonary emphysema in the patients. Table 2 shows that RV/TLC% in the observed group was decreased after nutritional supplementation with Haelan 851, Platinum Formula, oral nutritional beverage. There were obvious significant differences ($P, 0.01$) in the nutritionally supplemented group but there was no significant difference in the control group. (Table 2)

**Table 2 - Changes of RV/TLC% Before and After
Haelan 851 , Platinum Formula, Nutritional Supplementation**

<u>Group</u>	<u>Cases</u>	<u>Before</u>	<u>After</u>	<u>P Value</u>
Observed Group	41	45.6 ± 9.15	35.8 + 10.41	<0.01
Control Group	12	42.1 ± 7.80	40.3 + 8.52	>0.05

3. The Maximum- Mid Expiratory Forced Rate 25% to 75% (MMEFR 25-75%) in the observed group increased after the 60 days of nutritional supplementation with Haelan 851, Platinum Formula, oral nutritional beverage. No improvement of the MMERF 25 - 75% tests were found in the non-nutritionally supplemented Control group. (Table 3)

**Table 3 - Changes of MMEFR 25-75% Before and After
Haelan 851, Platinum Formula, Nutritional Supplementation**

<u>Group</u>	<u>Cases</u>	<u>Before</u>	<u>After</u>	<u>P Value</u>
Observed Group	41	2.0285 ± 0.7188	2.5595 ± 0.9533	<0.01
Control Group	12	2.3441 ± 0.8452	2.4012 ± 0.9165	>0.05.

DISCUSSION

Some evidence has shown that polymorphonuclear leukocytes (PMN) and alveolar macrophages (AM) are regarded primarily responsible for lung injury mechanisms as a result of oxidation and other proteolytic destruction of their cellular proteins. Studies on particle ingestion have demonstrated clearly that the oxidant damage to the lung can be evoked by the use of simple substrate enzyme combinations that generate the free radicals H_2O_2 and O_2 . These combinations produce varying degrees of endothelial cell damage, capillary leaks and inflammatory reactions. Hence, during the development of pneumoconiosis, the quantity of lipid peroxide (LPO) in the blood serum may increase.^{7,8}

Some researchers have reported that the cytotoxicity of various coal dust was not completely in keeping with the concentration of free silica in the coal dust and that metal elements in various coal dust appeared to have some effect upon cytotoxicity.⁹ Other research has indicated that dietary trace elements can inhibit lipid peroxidation and stabilize cell membrane structure and function. In the present study Haelan 851, Platinum Formula, nutritional supplementation inhibited the lipid peroxidation caused by pneumoconiosis and inhibited further deterioration of lung damage to some degree.

MMEFR 25-75% is a sensitive indication of lung ventilation function. It changes earlier than other target measurements of lung function.¹⁰ The results that MMERF 25-75% and RV/TLC%, which may be regarded as the indication of pulmonary emphysema¹¹, may improve after nutritional supplementation with Haelan 851, Platinum Formula. In addition, Haelan 851, Platinum Formula, nutritional supplementation provided therapeutic value for pneumoconiosis and beneficial repair of prior lung damage. These demonstrated improvements in lung function should produce similar therapeutic benefits for those with emphysema and related lung tissue damage.

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