Effective Utilization Example of UNEXEF

L-016

Dr. Kunihiko Terada

Himeji-city

Terada Clinic

Internal Medicine / Respiratory Medicine

We are committed to primary prevention, focusing on respiratory and lifestyle-related diseases, in order to extend healthy life expectancy through early detection and intervention at the pre-symptomatic stage, and to help ease the decline in patients' QOL and to depress the future medical costs.

We went to hear about a comparative study of the relationship between COPD (chronic obstructive pulmonary disease) and vascular endothelial function in bronchial asthma and normal lung patients.

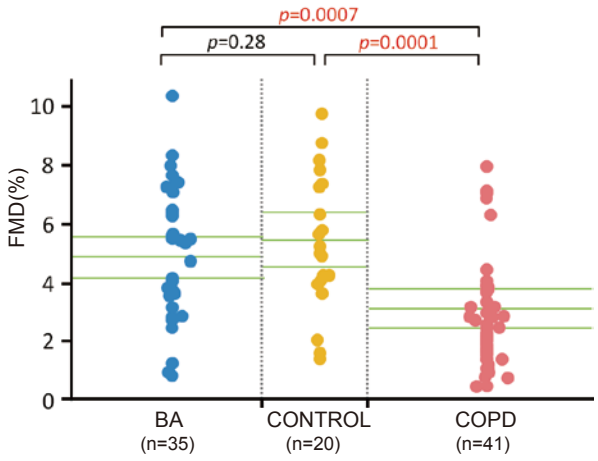
Vascular endothelial function is significantly deteriorated in COPD patients compared to bronchial asthma.

-There haven't been many reports on the relationship between COPD and vascular endothelial function, have there?

No. In the present study, we compared the degree of vascular endothelial dysfunction in 41 patients with stable COPD to 35 previously non-compared bronchial asthma (BA) patients and 20 age-matched normal lung function patients as controls.

-Was there a difference in airflow obstruction or endothelial function between bronchial asthma and COPD?

The %FEV 1 (the percentage of lung capacity exhaled in 1 second), a useful index of COPD severity, was 70.4% (61.2-79.7), 96.9% (88.7-105.1), and 110.3% (102.6-118.1) in COPD, BA, and controls, respectively, and FMD was 3.15% (2.57-3.75%) in COPD, significantly lower than in BA and controls.
(BA: 4.92% (4.13-5.71%), p=0.0007, control: 5.50% (4.41-6.59%), p=0.0001) (Figure 1)



Date presented as avarage & 95%CI. Wilcoxon/Kruskal-Wallis test

Figure 1 Comparison of %FMD in each case

COPD is an independent factor associated with vascular endothelial dysfunction.

-Did the endothelial function differ between COPD and bronchial asthma due to the different degree of airflow obstruction?

To determine whether endothelial dysfunction is specific to COPD, we also compared the results with those of the remodeling BA group, which had age and %FEV1-matched bronchial asthma, and found that FMD was 3.17% (2.52-3.82%) in the COPD group and 4.88% (3.40-6.37%) in the remodeling BA group. The COPD group showed a significant decrease. (p=0.02) (Figure 2) In addition, multiple regression analysis showed that COPD itself is a disease associated with vascular endothelial dysfunction. (Estimated regression coefficient = -1.45, 95% CI=-2.30 to -0.61; p=0.01)

Although COPD is a respiratory disease, the major cause of death in patients with mild to moderate COPD is cardiovascular death, and as COPD is exacerbated patients may suffer from complications of myocardial infarction and heart failure, or experience unfortunate outcomes by overlooking serious cardiovascular disease.

In that sense, as a respiratory specialist, I believe it is important to send the message that COPD has an aspect of vascular disease and to improve the prognosis of patients.

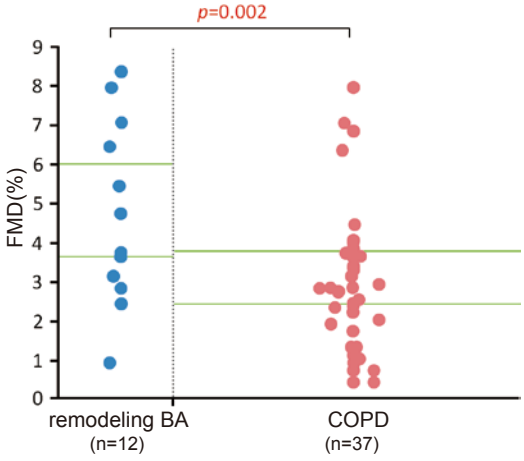


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Figure 2 Comparison of COPD and asthma with airflow obstruction

UNEX corporation
https://unex.co.jp
2-6-1 Sakae Naka-ku Nagoya.460-0008 Japan
TEL : +81-52-229-0820 FAX : +81-52-229-0823