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Upper extremity muscle volume and function as an indicator of pre-frailty in older adult patients with Chronic Obstructive Pulmonary Disease (COPD)

Teruyoshi Amagai, Eri Miyamoto, Masahiro Kaneko, Satomi Ichimaru and Yoko Hokotachi
Mukogawa Women's University, Japan

Background: In a survey of 2004 conducted by World Health Organization, chronic obstructive pulmonary disease (COPD) is proved third leading cause of death worldwide and develops frailty. However, the differences between pre-frailty and non-frailty or frailty are not well studied.

Objective: To examine the working hypothesis that there are differences in phenotypes between pre-frailty and non-frailty or frailty in patients with COPD.

Design and Setting: This is a cross-sectional study.

Participants: Patients with consecutive COPD male patients, whose age is 50 year-old or older, visited COPD outpatient clinic at single institute, between 2011, March and August, were eligible.

Measurements: The data categorized into seven domains according to Fried's phenotypic criteria were collected on all subjects divided into three groups: Non-, Pre- and frailty. All data was compared between two of three groups.

Results: Pre-frail COPD patients showed declines in upper extremities' muscle volume and functions assessed by arm muscle area and hand-grip strength ($P<0.05$) compared with data in non-frailty group. This was different from results of comparison data between pre- and frailty group where lower extremities' muscle data showed statistically different ($p<0.05$).

Conclusion: Our observation could be interpreted that declines in upper extremities' muscle volume and function might proceed in comparison pre-frailty with non-frailty COPD patients. This might be an early predictor to progress the severity of COPD in pre-frail COPD patients and might be potential factor to prevent deterioration of frailty and COPD severity.

Biography

Teruyoshi Amagai has completed his MD and PhD from University of Tsukuba, Japan and Clinical Practice from the Birmingham Children's Hospital in UK during 1993 and 1994. He is the Professor of Mukogawa Women's University since 2007 and has been In-charge of drawing up member, "Dietary Reference Intakes for Japanese (2015)", developed by the Ministry of Health Labor and Welfare, Japanese Government. He is the Editorial Board Member of Nutrition in Clinical Practice, academic journal of American Society for Parent and Enteral Nutrition (ASPEN).

amagait@nutrped.com

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