Proceedings of the Nutrition Society (2013), **72 (OCE1)**, E83 doi:10.1017/S0029665113000852

6th International Workshop on Immunonutrition, 15th–17th October 2012, Palma de Mallorca

Improvement of immune functions in elderly men and women after 3 months of vitamin C and vitamin C plus E supplementation

M. De La Fuente[1], O. Hernández[1], C. Sanchez[1], F. Arnalich[2] and A. Hernanz[3]
[1]*Department of Physiology. Faculty of Biology, Complutense University of Madrid,* [2]*Internal Medicine Department and* [3]*Biochemistry Department, Hospital Universitario La Paz, Madrid, Spain*

With ageing, a chronic oxidative process, the immune response is impaired. This immunosenescence, in which an alteration of the redox state of the immune cells appears (with an increase in oxidant levels and a decrease in antioxidant defences), is involved with the rate of ageing(1). Leucocyte functions are good health markers and longevity predictors(1) and nutrition has been proposed as one strategy of life style, which help to maintain an excellent immune function with aging(2). The aim of this work was to study the effects of daily oral administration of the antioxidant vitamin C (500 mg), or both vitamin C (500 mg) and vitamin E (200 mg) on several blood neutrophil functions (adherence, chemotaxis, phagocytosis, and superoxide anion levels) and lymphocyte functions (adherence, chemotaxis, proliferation, interleukin-2 secretion and natural killer activity) in healthy elderly men and women. These parameters were analysed before supplementation, after 3 months of supplementation, and 6 months after the end of supplementation (post-supplementation). In addition, adult subjects were used as the control age group. The results showed that vitamin C improved these immune parameters in elderly subjects, bringing their values close to those of adults. These effects were maintained after 6 months without supplementation in several functions. Similar effects were found in elderly supplemented with both vitamin C and E. Thus, a short period of vitamin C or vitamin C and E administration, at the doses used, improving the immune functions, could contribute to increase healthy longevity in elderly individuals.

This work was supported by MICINN (BFU2011–30336), UCM (910379ENEROINN) grants, RETICEF (RD06/0013/0003) from ISCIII.

1. De la Fuente M & Miquel J (2009) *Current Pharm Des* **15** (26), 3003–3026.
2. De la Fuente M, Cruces J, Hernandez O & Ortega E (2011) *Current Pharm. Des* **17** (36), 3966–3993.