Attenuation of Blood Parameters in Smokers and Non-Smokers after Intake of a Complex Food Additive

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This report describes an intervention study with healthy volunteers (20 smokers, 28 non-smokers) taking a food additive mainly containing vitamin C (ascorbic acid), vitamin E (α-tocopherol), ubiquinone (Q10), vitamin A and zinkoxide for four weeks in a double blind, randomized and placebo controlled manner. Before and after the intervention blood was withdrawn and general blood parameters were analyzed. In addition, lipid soluble antioxidants were analyzed in blood plasma by HPLC and the water soluble antioxidative properties were testet with the enzymic xanthin/xanthinoxidase-reaction. In summary the results show that the smoker-verum group exhibit a significant down regulation of the leukocyte counts. The test for antioxidants show the following significant differences after intervention:
Smokers exhibit an increase of both vitamin E and coenzyme Q10 and an attenuation of their (before intervention) clearly increased water soluble – antioxidative potential, non-smokers showed only an increase of vitamin E and trends of an increase of Q10 and water soluble-antioxidative potential. These results may contribute to the discussion of the intrinsic deficiency brought about by smoking and the possible attenuation of part of these deficiency by increasing the intake of certain vitamins or food additives.

Key words: Antioxidants, Reactive Oxygen Species, Food Additives