Cardiovascular

50 VITAMIN K TO IMPROVE MARKERS OF VASCULAR HEALTH AND PHYSICAL FUNCTION IN OLDER PEOPLE WITH VASCULAR DISEASE – A RANDOMISED CONTROLLED TRIAL

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Introduction: Low vitamin K intake has been linked to impaired muscle function, osteoporosis, stiffer arteries and an increased risk of cardiovascular disease. We investigated whether supplementation with vitamin K exerted beneficial effects on vascular health and physical function in older people with established vascular disease.

Methods: We recruited community based participants aged ≥70 years, with a history of hypertension, diabetes mellitus or a previous vascular event, to a double blind randomised controlled trial comparing the effect of 6 months of daily oral 100 mcg vitamin K2 or placebo. Outcomes were measured at 0, 3 & 6 months. Primary outcome was between-group difference endothelial function assessed using flow-mediated dilatation of the brachial artery. Secondary vascular outcomes were carotid-radial pulse wave velocity, augmentation index, blood pressure, carotid intima-media thickness, C-reactive protein, B-type Natriuretic Peptide and cholesterol. Handgrip strength and Short Physical Performance Battery were used to assess physical function. Postural sway was measured using forceplate analysis assessed over 30 seconds.

Results: 80 participants were randomised, mean age 77 (SD 5) years; 44/80 (55%) were male. No change was seen in the primary outcome of endothelial function (between group difference −0.3% [95%CI −1.3 to 0.8], p = 0.62). A modest, but non-significant improvement in arterial stiffness was seen in the vitamin K group compared to placebo (−0.8m/s [95%CI −1.8 to 0.3], p = 0.15) with all other vascular outcomes unchanged. A non-significant improvement was seen in mediolateral sway with vitamin K compared to placebo (-3.1mm [95%CI −9.0 to 2.8], p = 0.30).

Conclusions: Vitamin K supplementation did not improve markers of vascular health or physical function in this trial. The non-significant improvements in arterial stiffness and sway require further study.