The effect of Aged Garlic Extract (AGE) on cardiovascular risk factors

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Abstract

Background:
Cardiovascular disease (CVD) is a leading cause of morbidity worldwide. One of the most serious consequences of CVD is coronary atherosclerosis. Atherosclerosis develops over long time, which is why primary and secondary prevention is effective. Calcified atherosclerotic lesions in the coronary arteries can be measured as coronary artery calcification (CAC) score.

Aged garlic extract (AGE) has shown positive effects on blood pressure, blood lipids and inflammation in patients with elevated CVD risk. No previous study has evaluated these effects among European subjects.

We conducted a randomized placebo-controlled trial of 122 patients with a high risk of cardiovascular events. The patients were randomized after CT scan for a 1-year daily intake of either placebo or 2400mg AGE.

Methods/Parts:
1. The aim of the first study was to evaluate whether AGE influences coronary artery calcification (CAC) and generate an algorithm to predict the individual effect of AGE.
2. The aim of the second study was to measure the change in cutaneous microcirculation by Laser Doppler Velocimetry.
3. The aim of the third study was to measure AGE effect on blood pressure, blood lipids, CRP and Interleukin-6 in 31 females with low risk for cardiovascular events.
4. The aim of the forth study is to validate the algorithm in study 1 in a different (North American) cohort. This is done in collaboration with University of California Los Angeles. (Ongoing collaboration)

Results:
1. In study 1, AGE inhibited CAC progression and lowered IL-6, glucose levels and blood pressure. The AGE Algorithm predicted with 80% precision which patient will have a significantly reduced CAC progression using AGE supplement.
2. In study 2, AGE increased the microcirculation in patients with an increased risk for cardiovascular events.
3. In study 3, AGE decreased IL-6 in females with a low CVD risk profile.

Significance:
There is an increased interest regarding the connection between dietary intake and diseases. Primary and secondary prevention with alternative supplements to avoid or reduce the use of traditional medicines have gained the attention of the general public. AGE could be an option for some patients not interested in traditional medication.

Publications:

Study 2. Wlosinska M, Nilsson AC, Hlebowicz J, Malmsjö M, Fakhro M, Lindstedt S. Aged garlic extract preserves cutaneous microcirculation in patients with increased risk for