

Vitamins E and C may differ in their effect on contrast-induced acute kidney injury

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To the Editor,

A recent meta-analysis by Su et al. compared 12 different prophylactic interventions against contrast medium-induced acute kidney injury (CIAKI) (1). In their meta-analysis, Su et al. pooled different vitamins to a single group of “vitamins and analogues” but in so doing did not take into account that vitamin C is water soluble whereas vitamin E is fat soluble, and therefore their relative effects might be different. Su et al. calculated an odds ratio of 0.64 (with a 95% credible interval of 0.41-0.95) for the effect of “vitamins and analogues” but they did not calculate the specific individual effects of vitamins E and C. A previous meta-analysis of 9 trials focused on vitamin C alone and calculated that vitamin C may be useful for prophylaxis against CIAKI with a risk ratio (RR) of 0.67 (2).

Su et al. had identified 3 randomized trials on vitamin E prophylaxis against CIAKI (3-5). We pooled the results of these 3 studies (Figure 1) and calculated a pooled estimate of RR = 0.38 (95% CI 0.24-0.62), indicating that vitamin E significantly prevented CIAKI. There was no heterogeneity between the three trials. This estimate of the specific effect for vitamin E indicates a greater benefit compared with that of vitamin C (2).

Vitamins E and C should not be pooled into a single group of “vitamins and analogues” (1), instead they should be analyzed separately. Further research should therefore estimate the specific individual effects of vitamins E and C for preventing CIAKI.

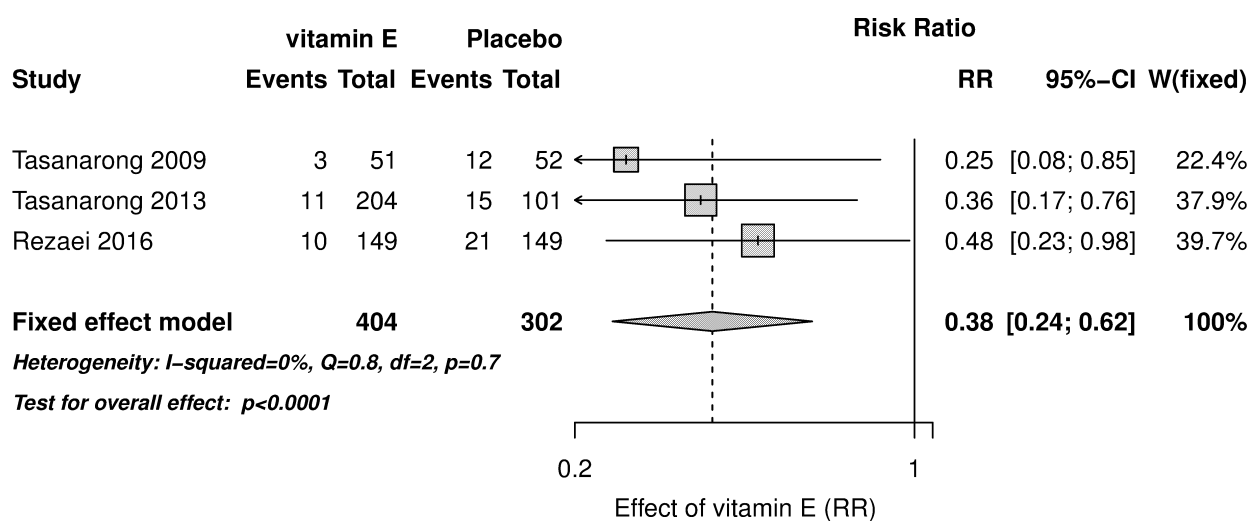


Figure 1. Effect of vitamin E in preventing CIAKI. This meta-analysis pools the vitamin E trials (3-5) identified by Su et al. (1). There is no heterogeneity between the 3 trials with $I^2 = 0\%$; $P = 0.7$ for the test of heterogeneity. In the forest plot on the right hand side, the vertical line indicates the placebo group level (RR = 1.00). The horizontal lines indicate the 95% CI values for the effect and the square in the middle of the horizontal line indicates the point estimate of the effect in the particular trial. The diamond shape indicates the pooled effect and its 95% CI values.

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