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In Reply to 'Sodium-Chloride Difference as a Simple Parameter for Acid-Base Status Assessment'

We are pleased that Drs Havlin, Matousovic, and Schück[1] are in agreement with the conclusions of our recent article.[2] However, we would disagree with their assertion that serum sodium-chloride difference is a useful parameter for assessing acid-base status. Quite the contrary, when used as proposed, this parameter can be misleading and therefore can cause errors in diagnosis and management. Whereas the authors would interpret the narrowing of the serum sodium-chloride difference as indicative of normal anion gap (hyperchloremic) metabolic acidosis, it might well evidence respiratory alkalosis or a mixed acid-base disorder. Similarly, widening of the serum sodium-chloride difference is not diagnostic of metabolic alkalosis, but might well be associated with respiratory acidosis or a mixed disorder.

We would strongly discourage sole use of the serum sodium-chloride difference in assessing acid-base status. There are no shortcuts to applying the physiologic approach, which remains the optimal approach to assessing the acid-base composition of the blood.[2,3]

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Vitamins E and C May Differ in Their Effect on Contrast-Induced Acute Kidney Injury

To the Editor:

A recent meta-analysis by Su et al[1] compared 12 different prophylactic interventions against contrast medium–induced acute kidney injury (CIAKI). In their meta-analysis, Su et al pooled different vitamins into 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

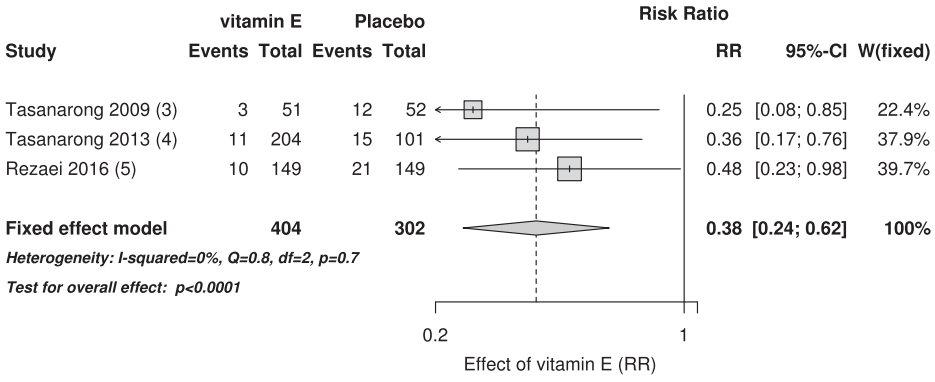

Figure 1. Effect of vitamin E in preventing contrast medium–induced acute kidney injury. This meta-analysis pools the vitamin E trials[3-5] identified by Su et al.[1] There is no heterogeneity among the 3 trials, with $I^2 = 0\%$; $P = 0.7$ for the test of heterogeneity. In the forest plot on the right side, the vertical line indicates the placebo group level (risk ratio [RR] = 1). The horizontal lines indicate the 95% confidence intervals (CIs) 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% CIs. Abbreviation: RR, risk ratio.

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 (Fig 1) and calculated a pooled estimate of RR = 0.38 (95% confidence interval, 0.24-0.62), indicating that vitamin E significantly prevented CIAKI. There was no heterogeneity among the 3 trials. This estimate of the specific effect for vitamin E indicates a greater benefit compared to 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.

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In Reply to 'Vitamins E and C May Differ in Their Effect on Contrast-Induced Acute Kidney Injury'

Rezaei and Hemilä[1] raise interesting issues regarding the difference between vitamins E and C in their effect on contrast-induced acute kidney injury (CIAKI). They pooled results of 3 studies on vitamin E prophylaxis against CIAKI and calculated a pooled estimate of risk ratio (RR) = 0.38 (95% CI, 0.24-0.62), indicating that vitamin E significantly prevented CIAKI. Therefore, they suggest an independent effect of vitamin E and argue that vitamin E and vitamin C should be analyzed separately.

We thank them for their perspective and cogent words. However, we combined vitamins C and E together in our analysis for the following reasons. First, both vitamins C and E have a similar antioxidant effect.[2,3] Second, there was not a significant difference in the heterogeneity test between the 2 agents (I^2 = 17.6%, P = 0.286). Third, the conclusion from the pooled result from only 3 randomized trials on vitamin E prophylaxis against CIAKI might be misleading because of bias (eg, publication bias). Fourth, the separation of vitamins C and E into different groups would increase the complexity of the models used in the network meta-analysis, which might lead to imprecise estimation of the parameters.

Further trials on these agents would give us more information about their real effect on prophylaxis against CIAKI.

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RESEARCH LETTER

Utility of Spot Urine Specimens to Assess Tubular Secretion

To the Editor:

We have previously shown that markers of tubule cell injury,[1] fibrosis,[2] abnormal acid-base homeostasis,[3] and diminished