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Energy target for individualized ICU nutrition: are repeated energy expenditure measurements better to meet requirements?

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Dear Editor,

We read with great interest the article by Singer et al. [1] reporting that actively supervised nutritional intervention providing near-target energy requirements in ICU patients leads to a better outcome.

The main purpose of the study was to determine whether nutritional support requirements (enteral nutrition with parenteral nutrition supplementation when needed) guided by repeated measurements of resting energy expenditure improved the outcome by better meeting the energy target needs (indirect calorimetry group), compared with a group of patients where energy target was calculated according to the 25 kcal/kg/day algorithm (control group). The authors' main conclusions stated that the indirect calorimetry group

received an amount of energy that was more adjusted to target requirements and had a better outcome. However, the indirect calorimetry group also received a greater amount of supplemental parenteral nutrition in order to meet the energy requirements, whereas the control group did not. Actually, the amounts of enteral nutrition received in both groups were very similar. Unfortunately, data values on energy requirements calculated on the basis of the 25 kcal/kg/day algorithm for the control group were not available in the paper. The lack of these data prevented the comparison of the values of requirements between both groups (indirect calorimetry vs. weight algorithm) which was intended to be one of the main points of the study. Despite the lack of these data, depicted figures in the paper appear to show that measured energy expenditure and algorithm-calculated target needs were seemingly very similar within the control group, which leads one to consider that both approaches for guessing the target needs accounted for similar values. Actually, if we look at the figures, the lesser amount of parenteral nutrition supplementation delivered to the control group seems to be the final reason for receiving less energy in the control group rather than the calculated target needs, whether measured by indirect calorimetry or calculated by the 25 kcal/kg algorithm. The reasons for these differences in the total amount of provided parenteral nutrition supplementation are not discussed in the paper. In fact, it is noticeable that, as described in the "Materials and

methods" section, the study group was supervised by a dietitian in charge of the study, whereas the control group was entirely managed by the ICU staff. Our hypothesis is that the presumable enthusiasm of the dietitian may be in fact the final reason for the study group receiving more parenteral supplementation and, therefore, an amount of energy that was more adjusted to target requirements compared to the control group.

Summarizing, we modestly believe that the discussion and conclusions offered by the authors do not seem to provide the reader with a reasonable statement of the main point of the study and the reported findings did not clearly show significant benefits of nutritional support guided by repeated measurements of resting energy expenditure when compared with a body weight algorithm-based calculation.

Reference

1. Singer P, Anbar R, Cohen J, Shapiro H, Shalita-Chesner M, Lev S, Grozovski E, Theilla M, Frishman S, Madar Z (2011) The tight calorie control study (TICACOS): a prospective, randomized, controlled pilot study of nutritional support in critically ill patients. *Intensive Care Med* 37:601–609

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