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Reply-Letter to the Editor - Timing of PROTein INtake and clinical outcomes of adult critically ill patients on prolonged mechanical VENTilation: The PROTINVENT retrospective study

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Reply-Letter to the Editor - Timing of PROTein INtake and clinical outcomes of adult critically ill patients on prolonged mechanical VENTilation: The PROTINVENT retrospective study

To the Editor:

We thank doctors Looijaard, Weijs and Oudemans-van Straaten for their interest in and response to the PROTINVENT study we published in Clinical Nutrition. In this study, we studied the association between the timing of protein intake and clinical outcomes in critically ill patients on prolonged mechanical ventilation and found a time-dependent effect of high protein administration[1]. We are honored to answer the questions they have raised.

We were aware that high energy intake (overfeeding) and severity of illness both might be negatively associated with increased mortality and therefore could influence our results. Therefore, we performed a multivariate analysis in which we corrected for Body Mass Index, mNUTRIC-score, ICU admission year, admission categories (surgical/medical), nutritional route, time to start feeding and caloric adequacy. To avoid collinearity, age, the number of comorbidities, APACHE-II and SOFA-scores were not corrected for separately as these variables are components of the mNUTRIC score. To further clarify this issue the adjusted hazard ratios are depicted in table 1. The presented results thus are corrected for the effects of overfeeding and severity of illness amongst other potential confounders and do not change the previously published conclusions. The time-dependent effect of protein intake persists.

We agree with the authors of the letter that during the study period a new computerized protocol was implemented in our ICU in July 2014 that reduced the numbers of patients being overfed according to calculated targets after the implementation [2]. However, we are confident that possible confounding was corrected for by adjusting for ICU admission year in the multivariate analyses. Neither addition nor replacement of 'ICU admission year' by the covariate 'patients included before/after protocol change in July 2014' altered our outcomes significantly. When replacing the covariate ICU admission year by 'patients included before/after protocol change in July 2014' in multivariate analysis the adjusted hazard ratios from table 1 changed from 1.263 (1.055-1.513, p=0.011) to 1.266 (1.066 – 1.519, p=0.011); and from 1.683 (1.206 – 2.349, p=0.002) to 1.729 (1.233 – 2.425, p=0.001); and from 0.751 (0.584 – 0.965, p=0.025) to 0.742 (0.577-0.954, p=0.020), respectively. Moreover, in the study referred to we showed that although the computerized protocol reduced overfeeding incidence, this benefit did not translate into differences in mortality after the implementation compared with the period before the implementation of the computer protocol [2].