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Trial of the Route of Early Nutritional Support in Critically Ill Adults

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ABSTRACT

BACKGROUND

Uncertainty exists about the most effective route for delivery of early nutritional support in critically ill adults. We hypothesized that delivery through the parenteral route is superior to that through the enteral route.

METHODS

We conducted a pragmatic, randomized trial involving adults with an unplanned admission to one of 33 English intensive care units. We randomly assigned patients who could be fed through either the parenteral or the enteral route to a delivery route, with nutritional support initiated within 36 hours after admission and continued for up to 5 days. The primary outcome was all-cause mortality at 30 days.

RESULTS

We enrolled 2400 patients; 2388 (99.5%) were included in the analysis (1191 in the parenteral group and 1197 in the enteral group). By 30 days, 393 of 1188 patients (33.1%) in the parenteral group and 409 of 1195 patients (34.2%) in the enteral group had died (relative risk in parenteral group, 0.97; 95% confidence interval, 0.86 to 1.08; P=0.57). There were significant reductions in the parenteral group, as compared with the enteral group, in rates of hypoglycemia (44 patients [3.7%] vs. 74 patients [6.2%]; P=0.006) and vomiting (100 patients [8.4%] vs. 194 patients [16.2%]; P<0.001). There were no significant differences between the parenteral group and the enteral group in the mean number of treated infectious complications (0.22 vs. 0.21; P=0.72), 90-day mortality (442 of 1184 patients [37.3%] vs. 464 of 1188 patients [39.1%], P=0.40), in rates of 14 other secondary outcomes, or in rates of adverse events. Caloric intake was similar in the two groups, with the target intake not achieved in most patients.

CONCLUSIONS

We found no significant difference in 30-day mortality associated with the route of delivery of early nutritional support in critically ill adults. (Funded by the United Kingdom National Institute for Health Research; CALORIES Current Controlled Trials number, ISRCTN17386141.)

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*A complete list of the investigators and committee members in the CALORIES trial is provided in the Supplementary Appendix, available at NEJM.org.

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