Review: supplemented enteral nutrition reduces infectious complications and length of hospital stay in patients with critical illness


QUESTION: Among patients with critical illness, does enteral nutrition supplemented with key nutrients compared with standard enteral nutrition reduce infectious complications, death, and length of hospital stay?

Data sources
Studies published in peer reviewed journals from 1990 to February 1998 were identified by searching Medline, doing handsearches of journals, and reviewing bibliographies of relevant articles.

Study selection
Randomised controlled trials were included if they compared the effects of enteral nutrition supplemented with key nutrients with standard enteral nutrition in patients who were critically ill.

Data extraction
Data were extracted on patient conditions; timing of initiation of feeding; supplemented nutrients, nutritional goals, achieved intake, and weight loss before study; and power calculations. Main outcomes were major infectious complications (wound infection, intra-abdominal abscess, pneumonia, and septicaemia), nosocomial pneumonia alone, death, and length of hospital stay. 2 independent raters assessed the methodological quality (selection, performance, attrition, and detection biases) of each trial.

Main results
11 trials (1009 patients) were included in the analysis. Enteral supplements included combinations of L-arginine, L-glutamine, branched chain amino acids, essential fatty acids, and ribonucleic acid. Meta-analysis was done on an intention to treat basis, using a fixed effects model. Patients who received supplemented enteral nutrition had a lower rate of infectious complications (table) and a reduced length of hospital stay (8 studies, weighted mean difference in length of stay 2.5 d, 95% CI around difference 1.0 to 4.0 d) than patients who received standard enteral nutrition. The groups did not differ for rates of nosocomial pneumonia or death. Similar results were found for all outcomes when 6 studies were analyzed separately.

Conclusions
Among patients with critical illness, enteral nutritional support supplemented with key nutrients reduced infectious complications and length of hospital stay when compared with standard enteral nutrition. No differences were found for rates of nosocomial pneumonia or death.

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