

Original Investigation

Nutritional Support and Outcomes in Malnourished Medical Inpatients

A Systematic Review and Meta-analysis

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IMPORTANCE During acute illness, nutritional therapy is widely used for medical inpatients with malnutrition or at risk for malnutrition. Yet, to our knowledge, no comprehensive trial has demonstrated that this approach is effective and beneficial for patients.

OBJECTIVE To assess the effects of nutritional support on outcomes of medical inpatients with malnutrition or at risk for malnutrition in a systematic review of randomized clinical trials (RCTs).

DATA SOURCES The Cochrane Library, MEDLINE, and EMBASE. The study dates were October 5, 1982, to April 30, 2014, in various (mostly European) countries. The dates of our analysis were March 10, 2015, to September 16, 2015.

STUDY SELECTION Based on a prespecified Cochrane protocol, we systematically searched RCTs investigating the effects of nutritional support (including counseling and oral and enteral feeding) in medical inpatients compared with a control group.

DATA EXTRACTION Two reviewers extracted data on study characteristics, methods, and outcomes. Disagreement was resolved by consensus.

MAIN OUTCOMES AND MEASURES The primary study outcome was mortality. Secondary outcomes included hospital-acquired infections, nonelective readmissions, functional outcome, length of hospital stay, daily caloric and protein intake, and weight change.

RESULTS We included 22 RCTs with a total of 3736 participants. Heterogeneity across RCTs was high, with overall low study quality and mostly unclear risk of bias. Intervention group patients significantly increased their weight (mean difference, 0.72 kg; 95% CI, 0.23-1.21 kg), caloric intake (mean difference, 397 kcal; 95% CI, 279-515 kcal), and protein intake (mean difference, 20.0 g/d; 95% CI, 12.5-27.1 g/d) compared with control group patients. No differences between intervention group patients and control group patients were found with respect to mortality (9.8% vs 10.3%; odds ratio [OR], 0.96; 95% CI, 0.72-1.27), hospital-acquired infections (overall, 6.0% vs 7.6%; OR, 0.75; 95% CI, 0.50-1.11), functional outcome (mean Barthel index difference, 0.33 point; 95% CI, -0.88 to 1.55 points), or length of hospital stay (mean difference, -0.42 days; 95% CI, -1.09 to 0.24 days). Nonelective readmissions were significantly decreased by the intervention (20.5% vs 29.6%; risk ratio, 0.71; 95% CI, 0.57-0.87).

CONCLUSIONS AND RELEVANCE In medical inpatients, nutritional support increases caloric and protein intake and body weight. However, there is little effect on clinical outcomes overall except for nonelective readmissions. High-quality RCTs are needed to fill this gap.

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