Secondary RCT Analysis

Association of Baseline Inflammation with Effectiveness of Nutritional Support Among Patients with Disease-Related Malnutrition

A Secondary Analysis of a Randomized Clinical Trial

Merker M, Felder M, Gueissaz L, Bolliger R, Tribolet P, et al. *JAMA Netw Open*. 2020;3(3): e200663.

Introduction:

The Effect of Early Nutritional Support on Frailty, Functional Outcomes, and Recovery of Malnourished Medical Inpatients Trial (EFFORT) found that initiating early individualized nutritional support can reduce complications and mortality among hospitalized patients. However, not all patients responded the same to nutritional intervention.

The presence of inflammation affects the patient's appetite, food intake, and gastrointestinal function, and causes insulin resistance. These factors can alter the patient's response to nutritional support. In order to understand the impact of inflammation on the patient's response to nutrition support, a secondary analysis of the EFFORT was conducted.

Study design & Objective:

Secondary analysis of the multicenter, randomized clinical trial, EFFORT, conducted June-July 2019, with the objective of examining if baseline inflammatory status is associated with the effect of individualized nutritional support on 30-day mortality.

Study population:

1950 malnourished patients with recorded C-reactive protein levels from samples drawn upon admission to the hospital. Patient were randomized to receive individualized protocol-driven nutritional support (intervention group) or standard hospital food (control group).

Results:

Of the 1950 patients at nutritional risk (median age 75, 52.6% men; NRS 2002 > 3) with C-reactive protein (CRP) level data:

- 533 (27.3%) had low levels of inflammation (CRP <10 mg/L)
- 894 (45.9%) had moderate levels of inflammation (CRP 10-100 mg/L)
- 523 (26.8%) had high levels of inflammation (CRP >100 mg/L)

Patients with low or moderate levels of inflammation who were receiving protocol-driven individualized nutrition support showed a significant reduction in 30-day mortality. There was significantly higher mean calorie and protein intake in the intervention group.

In patients with high levels of inflammation, there were no beneficial effects from individualized nutritional support per the study protocol. Such finding suggests that the metabolic impact of elevated inflammation may impair the effectiveness of nutritional intervention during the acute phase of illness.

Conclusions:

Inflammatory status at admission may be associated with response to nutrition support. Baseline mild and moderate inflammatory status showed a significant reduction in 30-day mortality when receiving individualized nutrition support.

Summary prepared by Nestlé Health Science.

This publication may be accessed online:

https://dx.doi.org/10.1001%2Fjamanetworkopen.2020.0663