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Increased mortality associated with growth hormone treatment in critically ill adults.

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BACKGROUND: The administration of growth hormone can attenuate the catabolic response to injury, surgery, and sepsis. However, the effect of high doses of growth hormone on the length of stay in intensive care and in the hospital, the duration of mechanical ventilation, and the outcome in critically ill adults who are hospitalized for long periods is not known. **METHODS:** We carried out two prospective, multicenter, double-blind, randomized, placebo-controlled trials in parallel involving 247 Finnish patients and 285 patients in other European countries who had been in an intensive care unit for 5 to 7 days and who were expected to require intensive care for at least 10 days. The patients had had cardiac surgery, abdominal surgery, multiple trauma, or acute respiratory failure. The patients received either growth hormone (mean [\pm SD] daily dose, 0.10 \pm 0.02 mg per kilogram of body weight) or placebo until discharge from intensive care or for a maximum of 21 days. **RESULTS:** The in-hospital mortality rate was higher in the patients who received growth hormone than in those who did not ($P < 0.001$ for both studies). In the Finnish study, the mortality rate was 39 percent in the growth hormone group, as compared with 20 percent in the placebo group. The respective rates in the multinational study were 44 percent and 18 percent. The relative risk of death for patients receiving growth hormone was 1.9 (95 percent confidence interval, 1.3 to 2.9) in the Finnish study and 2.4 (95 percent confidence interval, 1.6 to 3.5) in the multinational study. Among the survivors, the length of stay in intensive care and in the hospital and the duration of mechanical ventilation were prolonged in the growth hormone group. **CONCLUSIONS:** In patients with prolonged critical illness, high doses of growth hormone are associated with increased morbidity and mortality.