

Tight Blood-Glucose Control Without Early Parenteral Nutrition



Randomised, controlled trials conducted in ICUs show mixed results regarding the benefits and risks of tight blood glucose control. This inconsistency in findings may be attributed to differences in the administration of early parenteral nutrition and the occurrence of insulin-induced severe hypoglycaemia.

In this study, patients admitted to the ICU were randomly assigned to two groups: one receiving liberal glucose control (insulin only when blood glucose exceeded 215 mg/dL) and the other receiving tight glucose control (targeting blood glucose levels with the LOGIC-Insulin algorithm at 80 to 110 mg/dL). Both groups did not receive parenteral nutrition for the first week. The primary outcome of the study was the duration of ICU care, calculated as the time to discharge alive from the ICU, with death as a competing risk. The study also examined 90-day mortality as a safety outcome.

The study included 9,230 patients. 4,622 were assigned to liberal glucose control and 4,608 to tight glucose control. The median morning blood glucose level was 140 mg/dL with liberal control and 107 mg/dL with tight control. Severe hypoglycaemia occurred in 0.7% of patients in the liberal control group and 1.0% in the tight control group. The duration of ICU care needed was similar in the two groups, with no significant difference in the risk of earlier discharge alive. 90-day mortality rates were comparable at 10.1% for liberal glucose control and 10.5% for tight glucose control.

Analyses of eight secondary outcomes showed that the incidence of new infections, respiratory and haemodynamic support duration, time to discharge alive from the hospital, and mortality in the ICU and hospital were not significantly different between the two groups. However, severe acute kidney injury and cholestatic liver dysfunction appeared less prevalent in the tight glucose control group.

Overall, findings from this study show that in critically ill patients not receiving early parenteral nutrition, tight glucose control did not have a significant impact on the duration of ICU care needed or on mortality outcomes.

Source: [NEJM](#)

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