



Review

Management of Glucose Control in Noncritically Ill, Hospitalized Patients Receiving Parenteral and/or Enteral Nutrition: A Systematic Review

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Abstract: Hyperglycemia is a common occurrence in hospitalized patients receiving parenteral and/or enteral nutrition. Although there are several approaches to manage hyperglycemia, there is no consensus on the best practice. We systematically searched PubMed, Embase, Cochrane Central, and ClinicalTrials.gov to identify records (published or registered between April 1999 and April 2019) investigating strategies to manage glucose control in adults receiving parenteral and/or enteral nutrition whilst hospitalized in noncritical care units. A total of 15 completed studies comprising 1170 patients were identified, of which 11 were clinical trials and four observational studies. Diabetes management strategies entailed adaptations of nutritional regimens in four studies, while the remainder assessed different insulin regimens and administration routes. Diabetes-specific nutritional regimens that reduced glycemic excursions, as well as algorithm-driven insulin delivery approaches that allowed for flexible glucose-responsive insulin dosing, were both effective in improving glycemic control. However, the assessed studies were, in general, of limited quality, and we see a clear need for future rigorous studies to establish standards of care for patients with hyperglycemia receiving nutrition support.

Keywords: glucose control; hyperglycemia; parenteral nutrition; enteral nutrition; nutritional support; insulin

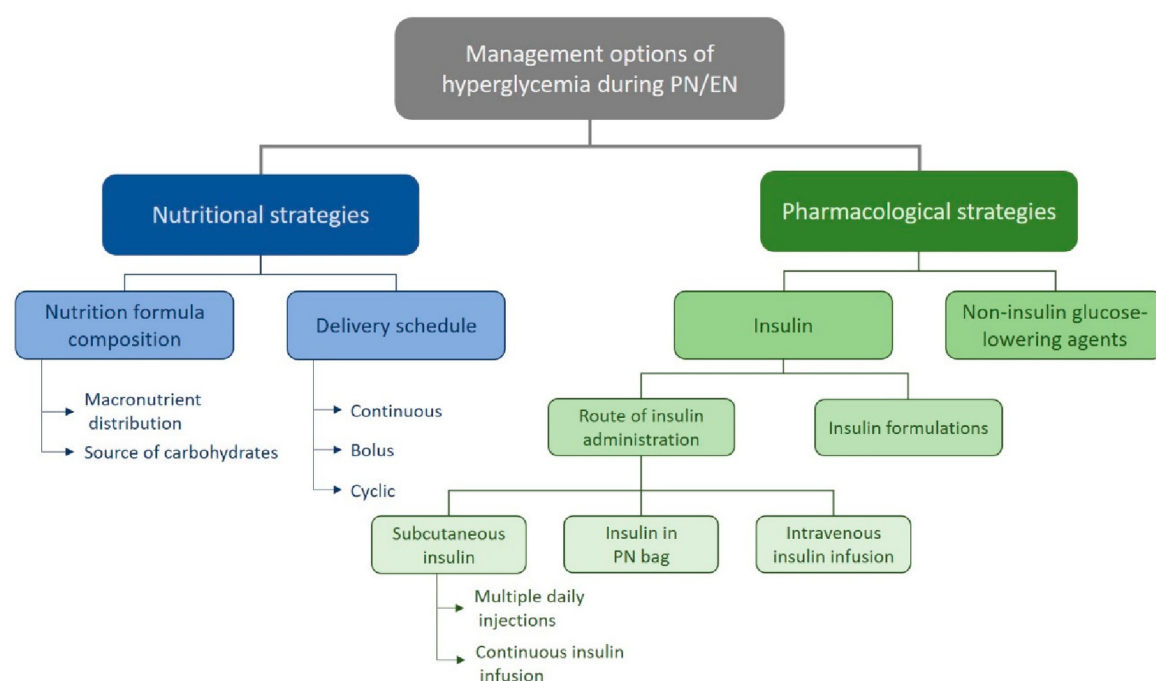


Figure 1. Management options of hyperglycemia during PN/EN. PN = parenteral nutrition, EN = enteral nutrition.