

## 重症糖尿病人靜脈營養支持與照護

### Parenteral nutritional support in critically ill diabetic patients

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The main goal of parenteral nutrition (PN) is to deliver a nutrient mixture closely related to requirements safely and to avoid complications. As PN administration the considerable risk of overfeeding which can be as deleterious as underfeeding. In the stressed patient the maximum oxidation rate of glucose is 4–7 mg/kg/min. In order to decrease the risk of metabolic alterations, the maximum rate of glucose infusion should probably not exceed 5 mg/kg/min; it is probably safer to give 150 g/day. The hyperglycemia related to PN enriched in dextrose requires higher doses of insulin. During critical illness, 1.3 g/kg/day protein equivalents can be delivered progressively. Essential fatty acids (FA) were previously recommended at a dose of 8 g/day, intravenous lipids the upper recommendation is 1 g/kg bodyweight/day. Blend of FAs should be considered, including medium chain triglycerides (MCTs), n-9 monounsaturated FAs, and n-3 polyunsaturated FAs.

The formula used for non diabetics are suitable for use in diabetes, provided that extra insulin is given according to changes in blood glucose. When starting TPN, a balance combination of carbohydrate and fat should prevent and treat the metabolic abnormalities of these macronutrients frequently encountered in DM patient. Intravenous glutamine, added to TPN may also improved glucose tolerance in critically ill patients.