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Opinion Article

Differences in Blood Sugar Concentrations and Clinical Outcomes in Diabetic Individuals

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DESCRIPTION

Hospitalization diabetes care is the management of blood glucose levels and other aspects of diabetes in patients who are admitted to the hospital for various reasons. People with diabetes have a higher risk of developing complications such as heart disease, kidney disease, nerve damage, and infections. Therefore, it is important to maintain good glycemic control both in and out of the hospital. However, hospitalization can pose many challenges for diabetes care, such as stress, illness, surgery, fasting, changes in medication and diet, and lack of access to self-monitoring devices and supplies. These factors can cause fluctuations in blood glucose levels, which can lead to hyperglycemia (high blood sugar), hypoglycemia (low blood sugar), or glucose variability (frequent swings in blood sugar). These conditions can worsen the patient's health outcomes, increase the length of stay and the cost of care, and even increase the risk of death. Therefore, it is essential to have a comprehensive and individualized approach to diabetes care in the hospital setting. The A1C test measures the average blood glucose level over the past 2 to 3 months and reflects the patient's long-term glycemic control. The A1C test can help to identify patients who need more intensive treatment or education, as well as those who are at risk of complications or readmission.

Establishing glycemic targets in hospitalized patients based on their clinical condition, risk of hypoglycemia, and expected duration of hospital stay. The American Diabetes Association (ADA) recommends a target range of 140 mg/dL to 180 mg/dL (7.8 mmol/L to 10 mmol/L) for most non-critically ill patients. However, this range may be adjusted according to the patient's preferences, comorbidities, and prognosis. For example, lower targets (110 mg/dL to 140 mg/dL (6.1 mmol/L to 7.8 mmol/L)) may be appropriate for patients with stable diabetes and no significant comorbidities, while higher targets (180 mg/dL to 250 mg/dL (10 mmol/L to 13.9 mmol/L)) may be suitable for patients with severe illness, limited life expectancy, or history of recurrent hypoglycemia. Insulin is the preferred agent for most hospitalized patients with diabetes or hyperglycemia, as it can rapidly and effectively lower blood glucose levels and can be adjusted according to the patient's needs. Oral Antidiabetic Drugs (OADs) are generally not recommended in hospitalized patients due to their unpredictable absorption, variable effects, potential interactions, and increased risk of hypoglycemia. However, some OADs may be considered in selected patients with stable diabetes who are able to eat regular meals and have no contraindications. Noninsulin injectable agents such as Glucagon-Like Peptide 1 (GLP-1) receptor agonists and amylin analogs may also be used as adjunctive therapy in some patients with type 2 diabetes who are not achieving glycemic targets with insulin alone.

Treating and preventing hypoglycemia in hospitalized patients with diabetes or hyperglycemia. Hypoglycemia is defined as a blood glucose level below 70 mg/dL (3.9 mmol/L) or below the patient's target range. It can cause symptoms such as sweating, shaking, confusion, dizziness, hunger, headache, and palpitations. If left untreated, hypoglycemia can lead to seizures, coma, brain damage, or death. Therefore, it is important to promptly recognize and treat hypoglycemia in hospitalized patients by giving them a fast-acting carbohydrate source such as glucose tablets, juice, or candy. The cause of hypoglycemia should also be identified and corrected by adjusting the dose or timing of insulin or other anti-hyperglycemic agents. In addition, hypoglycemia can be prevented by monitoring blood glucose levels frequently (at least four times a day), avoiding fasting or skipping meals, and educating patients and staff about the signs, symptoms, and treatment of hypoglycemia. Medical nutrition therapy is the provision of individualized nutrition advice and education by a registered dietitian or a qualified nutrition professional. Medical nutrition therapy can help to optimize glycemic control, prevent or treat complications, and improve the patient's quality of life. The main goals of medical nutrition therapy in hospitalized patients are to provide adequate calories, protein, and micronutrients to meet the patient's needs, to maintain blood glucose levels within the target range, and to prevent or correct electrolyte imbalances and dehydration.

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CONCLUSION

The patient's medication plan and blood glucose monitoring routine should be matched with the type, quantity, and time of meal intake. The patient's preferences, cultural background, and food allergies or intolerances should also be considered. In general, a balanced diet that includes carbohydrates, protein, fat, fiber, vitamins, minerals, and water is recommended for most hospitalized patients with diabetes or hyperglycemia. However, the specific composition and distribution of macronutrients may vary depending on the patient's condition, goals, and treatment. For example, patients with renal impairment may need to restrict their intake of protein, sodium, potassium, and phosphorus. Patients who are unable to eat or drink due to illness or surgery may require enteral or parenteral nutrition support.