

Diabetes- inpatient care

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Introduction

- ❖ DM patients are frequently admitted to a hospital, usually for treatment of conditions other than the DM.
- ❖ Patients with higher values for A1C were at highest risk for admission.
- ❖ Glycemic control maybe unstable because of :
 - Stress of the illness or procedure.
 - Changes in diet, physical activity, and treatment regimen.

Goals of DM care in hospital

- ❖ Avoid hypoglycemia
- ❖ Avoid severe hyperglycemia, volume depletion, and electrolyte abnormalities
- ❖ Ensure adequate nutrition
- ❖ Assess patient educational needs and address deficiencies

Inpatient care- Insulin treatment

- ❖ Although most patients will have DMII , many will require insulin therapy, if only temporarily during inpatient admissions.
 - ❖ Insulin may be given subcutaneously or as an intravenous infusion.
 - ❖ The key point is that the patient should have at least a small amount of insulin circulating at all times;
- Which will significantly increase the likelihood of controlling blood glucose levels during illness.

Inpatient care- ADA recommendations

- ❖ Perform an A1C for all patients with DM or hyperglycemia admitted if not performed in the prior 3 months.
- ❖ Insulin therapy should be initiated for treatment of persistent hyperglycemia starting at ≥ 180 mg/dL.
- ❖ A target glucose of 140–180 mg/dL is recommended for the majority of inpatients.

Inpatient care- ADA recommendations

- ❖ More stringent goals, such as <140 mg/dL (mmol/L) may be appropriate for some patients, if not at high risk of hypoglycemia.
- ❖ IV insulin should be administered using validated protocols that adjustments in the infusion rate based on glycemic changes and insulin dose.
- ❖ There should be a structured management plan for hypoglycemia.

Inpatient care- ADA recommendations

- ❖ An insulin regimen with basal insulin + nutritional and correction components is the preferred treatment.
- ❖ The sole use of **sliding scale insulin** in the inpatient hospital setting is strongly discouraged

Inpatient care- Sliding scale insulin

- ❖ Few data to support its benefit.
- ❖ Potential harm when applied in a routine fashion;
 - When all patients receive the same orders.
 - When the sole form of insulin administered is **rapid-acting** insulin every 4-6 hours without basal insulin.
- ❖ Based on predefined fixed insulin doses.
- ❖ Does not take changes in diet, activity or stress into account.

Inpatient care- Diet treated patients

- ❖ Patients with a non-critical acute illness , that is short-lived, will typically need no specific anti-hyperglycemic therapy.
- ❖ Insulin therapy should be instituted if the pre-prandial blood glucose exceeds 150 to 200 mg/dL
- ❖ But insulin may not be necessary after the episode is over.

Patients treated with oral agents

- ❖ Insulin is the preferred treatment for hyperglycemia in hospitalized patients.
- ❖ However, insulin may not be necessary in patients:
 - Who are well controlled on their outpatient regimen
 - Who are eating
 - And in whom no change in their medical condition or nutritional intake is anticipated.

DM patients receiving EN or PN

TPN

- Insulin is typically administered with the nutrition.
- To determine the correct dose of insulin to add to the TPN fluid, a separate infusion of regular insulin can be used.
- The amount of insulin can be titrated based upon glucose monitoring.

DM patients receiving EN or PN

Enteral feedings:

→ In patients receiving continuous enteral feeds, the total daily dose of insulin could be administered as basal insulin alone

→ However, if the feeds are unexpectedly discontinued, hypoglycemia may occur.

→ A safer approach may be to administer 50 % of the total daily insulin dose as basal insulin and 50 % as prandial

Inpatient care-summary

- ❖ Patients with type 1 or type 2 diabetes mellitus are frequently admitted to a hospital, usually for treatment of conditions other than the diabetes.
- ❖ Glycemic control is likely to become unstable in these patients, not only because of the stress of the illness or procedure, but also because of the concomitant changes in dietary intake and physical activity.