Table IV. Treatment of Diabetic Ketoacidosis

Fluids

1000-2000 ml normal saline (0.9% NaCl) over 1-2 hours for prompt recovery of hypotension and/or hypoperfusion. Then, normal saline or 0.45% saline at 250-500 mL/h depending upon serum sodium concentration. When plasma glucose $\leq$ 250 mg/dL, change to D5%1/2NS saline to allow continued insulin administration until ketonemia is controlled, while avoiding hypoglycemia.

Insulin

0.1 U /kg body weight as intravenous bolus followed by 0.1 U/kg/h as a continuous infusion. The goal is to achieve a rate of decline of 50 to 100 mg per hour. When plasma glucose $\leq$ 250 mg/dL, reduce rate to 0.05 units/kg per hour. Thereafter, adjust insulin rate to maintain glucose levels ~ 200 mg/dL until ketoacidosis is resolved. In patents with mild to moderate DKA, subcutaneous regular insulin or rapid insulin analogs may be an alternative to intravenous insulin (see text for details).

Electrolyte replacement

Potassium

K^+ = > 5.5 mEq/l; no supplemental is required

K^+ = 4 - 5 mEq/l; 20 mEq/l of replacement fluid

K^+ = 3 - 4 mEq/l; 40 mEq/l of replacement fluid

K^+ = <3 mEq/l; 10-20 mEq per hour until serum K^+ > 3 mEq/l, then add 40 mEq/l to replacement fluid.

Laboratory

Comprehensive admission laboratory profile. EKG, chest radiograph, and cultures of

blood, urine and sputum as indicated. During therapy, capillary blood glucose should be determined every 1-2 hours at the bedside using a glucose oxidase reagent strip; and blood should be drawn every 4 hours for determination of serum electrolytes, glucose, blood urea nitrogen, creatinine, phosphorus, and venous pH.

Transition to subcutaneous (SC) insulin therapy

Insulin infusion should be continued until resolution of ketoacidosis (glucose $\leq$ 200 mg/dL, bicarbonate $\geq$ 18 mEq/L, pH $\geq$ 7.30). When this occurs, start SC insulin regimen. In patients with known diabetes who were receiving insulin prior to admission, restart previous insulin regimen. In patients with newly diagnosed diabetes, start insulin at 0.6 units/kg/day. Consider basal bolus regimen with insulin analogs (preferred) or multi-dose insulin regimen with regular insulin or short-acting insulin analogs (Lispro, Aspart) and intermediate-acting insulin (NPH). To prevent recurrence of DKA during the transition period to SC insulin, intravenous insulin should be continued for 2-4 hours after SC insulin is given.