Diabetic Ketoacidosis

Bima AS

Learning Object

- *Describe the management of Diabetes Ketoacidosis*

Definition

- DKA is an acute complication of diabetes typically characterized by hyperglycaemia, ketone body formation and metabolic acidosis (Wallace & Matthews, 2004).
- DKA can be life-threatening; if untreated coma and death will occur (Marcovitch, 2005).

GDS > 250 mg/dl

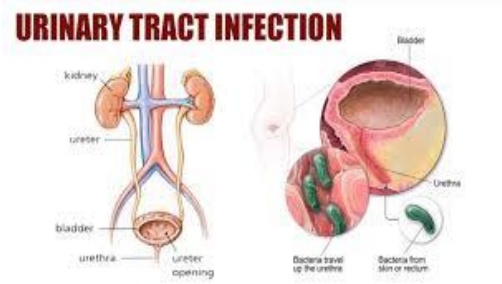
positive serum Keton or urine ketones

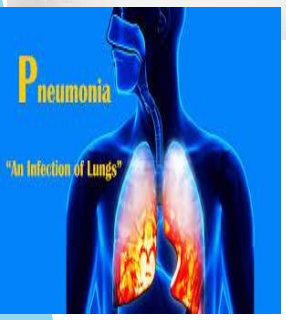
Hyperglycaemia, Ketone body formation and Metabolic acidosis

arterial pH below 7.35, a serum bicarbonate low, anion GAP >18 mEq/L

Causes of DKA

intercurrent illnesses: surgery, trauma, myocardial ischemia or pancreatitis





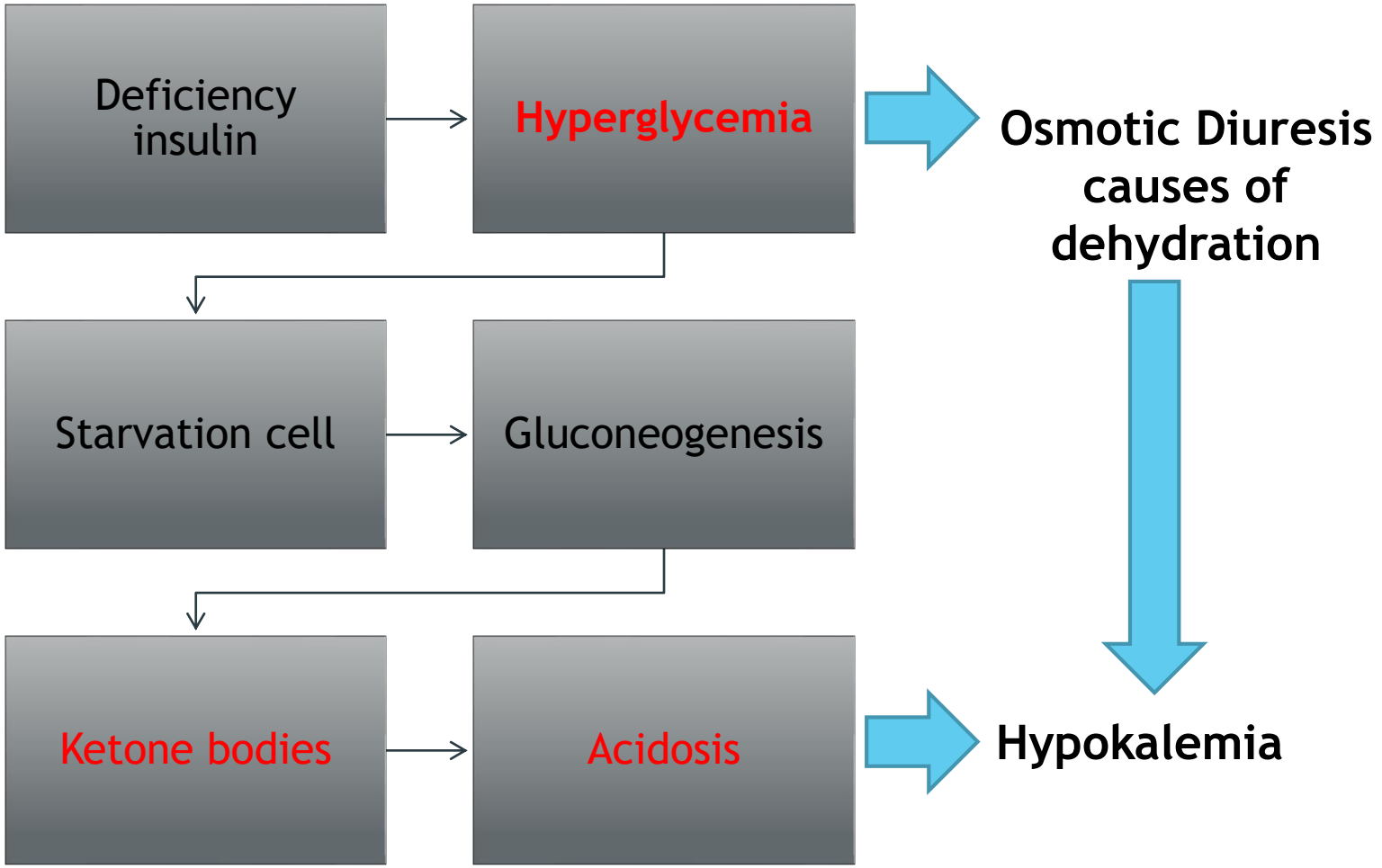
DKA

Failure 5 DM Management

1. Education
2. Food management
3. Exercise
4. Insulin
5. Monitor Blood Glucose

Miscellaneous: drugs or alcohol misuse

Pathophysiology DKA



Sign and symptom

1. Hyperglycemia
2. Ketone (+)
3. Acidosis
4. Triad Poly
5. Breath smells of ketones
6. Kussmaul respiration
7. weakness
8. Loss of consciousness

Management DKA

1. Primary Assessment: ABCDE
2. Administer oxygen using a non-rebreathe mask → oximeter
3. Insert a wide-bore intravenous (IV) cannula
4. Fluid Therapy
5. Monitor electrolytes (K+)
6. Acidosis Treatment→ insulin, NaHCO3
7. ECG monitoring
8. Monitor the patient's vital signs closely: fluid balance, blood glucose, blood ketones, arterial blood gases, and urea and electrolytes.

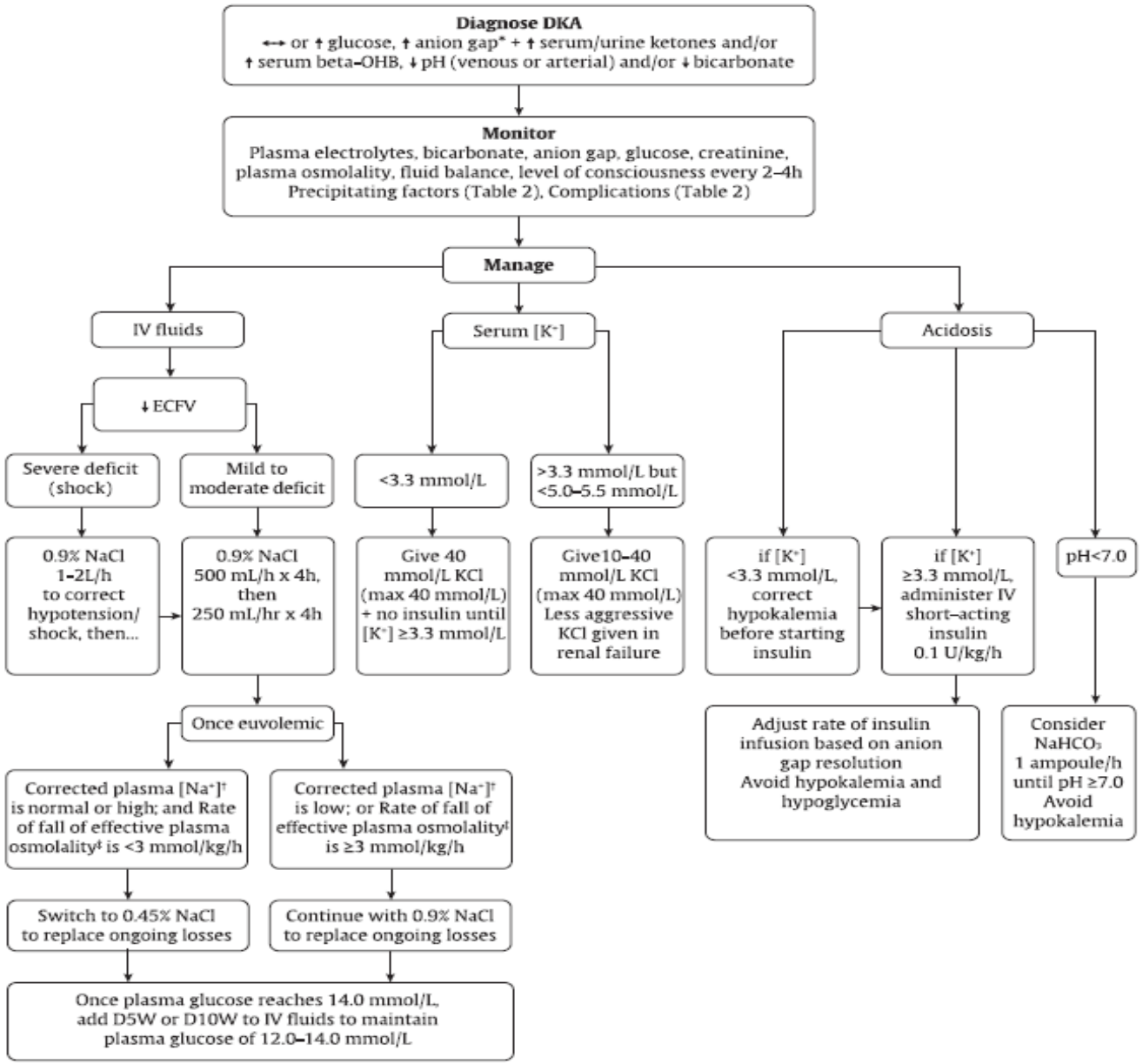


Figure 1. Management of diabetic ketoacidosis in adults.
Beta-OHB, beta-hydroxybutyric acid; *DKA*, diabetic ketoacidosis; *ECFV*, extracelluar fluid volume; *IV*, intravenous.
*Plasma glucose may be lower than expected in some settings.
**Anion gap = plasma [Na+] − plasma [Cl−] − plasma [HCO_3^-].
†Corrected plasma [Na+] = measured [Na+] + 3/10 × ([plasma glucose (mmol/L)] − 5).
‡Effective plasma osmolality = [Na+] × 2 + [plasma glucose (mmol/L)], reported as mmol/kg.

Nursing Management

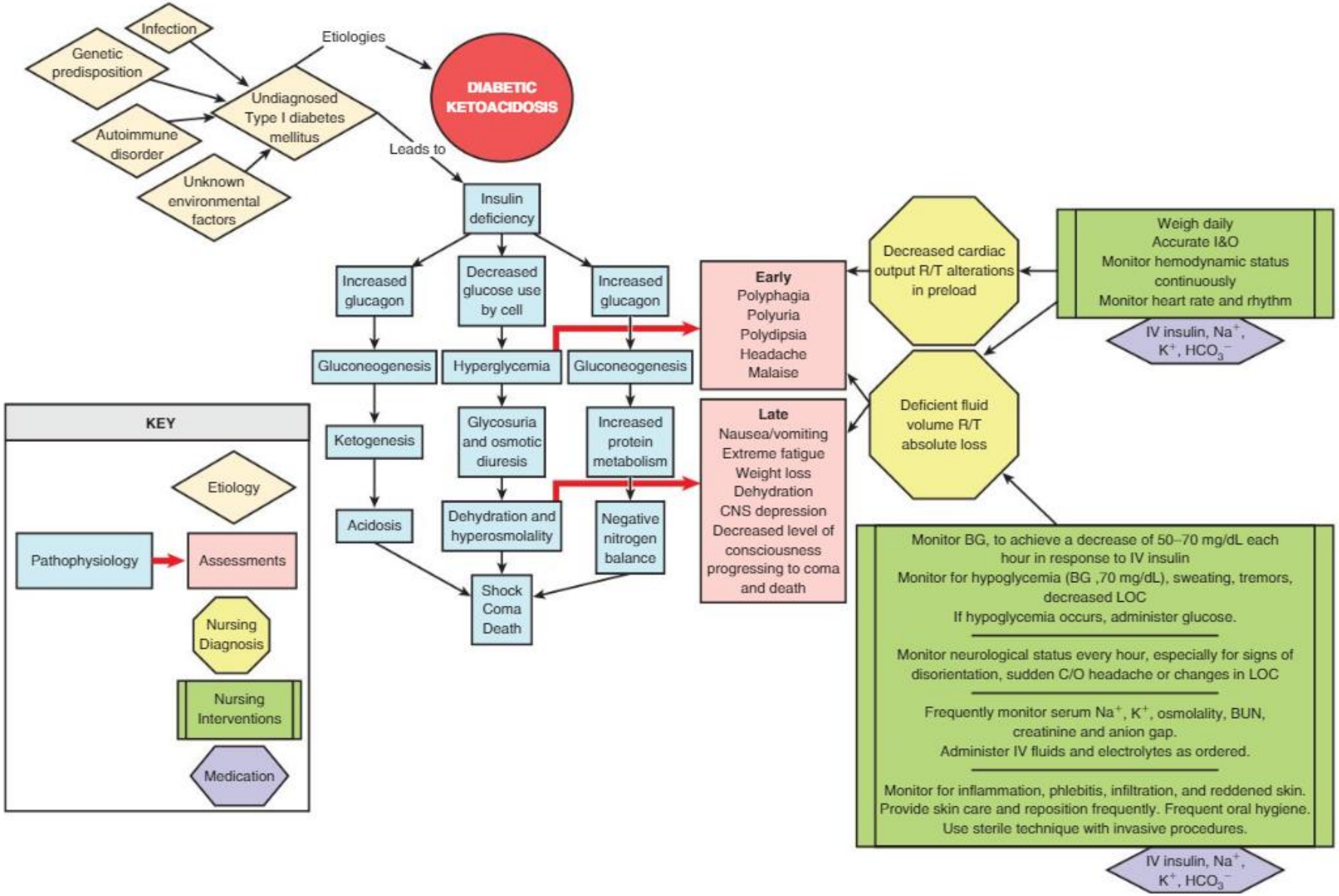


FIGURE 33-2 Concept Map for Diabetic Ketoacidosis. (Concept map illustration created by Elaine Bishop Kennedy, EdD, RN.)

- Read the following on Moodle/Bacalah hal berikut dalam Moodle:
  - Jerreat, L. (2010). Managing diabetic ketoacidosis. *Nursing Standard*, *24*(34), 49-56.
- Answer the following questions/jawablah pertanyaan dibawah ini:
  - What is DKA/apa itu DKA?
  - What are causes for DKA/Apakah penyebab DKA?
  - What are signs and symptoms for DKA/Apa tanda dan gejala DKA?
  - What is the treatment for DKA in the PowerPoint/Apa penanganan DKA dalam PPT?
  - What is the treatment for DKA in the Jerreat article/Apa penanganan DKA dalam artikel Jerreat ?
  - What treatment, if any, have you seen for DKA/apa penanganan, jika ada, yang pernah kamu lihat untuk DKA?
- NOTE to convert glucose values/CATATAN untuk konversi nilai glukosa
  - **mg/dl x 0.0555 = mmol/l**
  - **mmol/l x 18.0182 = mg/dl**

Reference

- Goguen, J., & Gilbert, J. (2018). Hyperglycemic Emergencies in Adults Diabetes Canada Clinical Practice Guidelines Expert Committee, *42*, 109–114.
- JBDS. (2013). Joint British Diabetes Societies Inpatient Care Group The Management of Diabetic Ketoacidosis in Adults, (September).
- Urden, L. D., Stacy, K. M., & Lough, M. E. (2010). Critical care nursing: Diagnosis and management. St. Louis, Mo: Saunders/Elsevier