

ALERT

Type 1 diabetes is on the rise!

REMEMBER THE FOUR MAIN SYMPTOMS:

POLYDIPSIA • POLYURIA

WEIGHT LOSS

ENURESIS (recent onset)

Other signs or symptoms that may be present are:

Flu-like Symptoms

Dehydration (In spite of good fluid intake!)

Extreme Thirst • Vomiting

Frequent Urination (In spite of dehydration)

Bedwetting • Deep Breathing

Lethargy • Fruity Odor to Breath

Yeast Infections • Blurred Vision

A simple urine dipstick could easily differentiate diabetes from other illnesses. Most deaths in new-onset cases now occur because the diagnosis was missed at the time of an earlier clinic/ED visit.

Childhood or Type 1 (Insulin-Dependent) Diabetes Mellitus

1) REMEMBER THE SYMPTOMS: Polyuria, Polydipsia, Weight Loss, Enuresis (recent onset).

When ketones are present symptoms may resemble the flu (nausea and vomiting). The breath may have a fruity odor. (A simple urine dipstick test or meter-glucose test could save a life. 85% of deaths in children with diabetes are secondary to severe DKA.)

2) SEVERE DKA:

- i) Venous (or arterial) pH <7.10
- ii) $\text{HCO}_3^- < 8 \text{ mEq/L}$
- iii) Usually large urine ketones on dipstick
- iv) Breath may have “fruity” odor
- v) Often Kussmaul respirations
- vi) Treat at facility with pediatric ICU

3) TREATMENT OF DKA:

- i) Rehydration: 10-20 ml/kg bolus in first 1-2 hours (NS or LR)
- ii) NPO if vomiting
- iii) Insulin drip: 0.1 U/kg per hour IV
- iv) If still dehydrated after 1-2 hours: can repeat bolus of 10-20 ml/kg NS or LR over 1-2 hours — MAXIMUM IV FLUIDS MUST BE $\leq 40 \text{ ml/kg}$ in the first four hours; then fluids (0.45NS) at 1.5 times maintenance. Give no more than 4L of fluid/m²/24 hours (including initial bolus)
- v) Add potassium(K⁺) when pH >7.1 and serum K⁺ known to be normal or low (may use 20mEq/L KPO₄ and 20 mEq/L KAc [or KCl])
- vi) Aim for glucose fall of 100 mg/dl per hour
- vii) Add 5% dextrose to IV when blood glucose falls to 200-250 mg/dl
- viii) Repeat electrolytes and venous pH hourly until pH >7.1; then repeat every 2 hours until >7.2 and then every 4 hours until >7.3. A falling serum Na⁺ is a danger sign related to cerebral edema.

4) CEREBRAL EDEMA: A CLINICAL EMERGENCY!

- Suspect if bad headache, excessive lethargy, or any deterioration in mental status
- Dilated or non-responsive pupils are often the first sign
- Treatment:
 - i) Mannitol, 1-2 gm/kg IV over 30 minutes — if patient improves and later worsens it may need to be repeated, (give immediately upon suspecting cerebral edema)
 - ii) Reduce fluids (<70cc/kg per day)
 - iii) Elevate head of bed
 - iv) Hyperventilation until pCO₂=25 to 27 mm Hg

5) IF YOU NEED HELP, CALL YOUR AREA DIABETES CENTER: _____.

FOR THE ROCKY MOUNTAIN AREA, CALL THE BARBARA DAVIS CENTER FOR DIABETES - UNIVERSITY OF COLORADO AT DENVER AND HEALTH SCIENCES CENTER (DAYTIME: 303-724-2323 • AFTER HOURS: 303-388-2626).