SCRENING, EVALUATION, AND DIAGNOSIS ALGORITHM

Child or adolescent presents at office/clinic with SYMPTOMS suggestive of diabetes (a)

ASYMPTOMATIC child or adolescent screened because of high risk for type 2 (b)

Obtain LABS (c)

Random Plasma Glucose (RPG)?

RPG <140

- RPG <140

NORMAL or PRE-DIABETES: - If symptomatic, look for other causes of symptoms - If high-risk for type 2, or if FPG is 100-125, refer for education on lifestyle modifications

FPG <126

Stabilize and re-evaluate

Yes

Intercurrent illness/condition? (e.g., dehydration)

RPG ≥ 200

POSSIBLE DIABETES: Within 1-2 days, schedule Fasting Plasma Glucose (FPG)

RPG 140-199

No

Diabetes symptoms? (a)

Random Plasma Glucose (RPG)?

FPG > 126

DIABETES

Obtain ADDITIONAL LABS to help identify type 2: (e)

- c-peptide
- Glutamic acid decarboxylase antibody (GAD AB)
- Islet cell antibody 512 (ICA)

Type 1 or Type 2? (Calculate body mass index (BMI))

Possible DKA? (serum pH < 7.35 OR serum bicarb < 18)

BMI ≥85% for age

No

Yes

While awaiting results, treat per blood glucose and ketone values

BMI <85% for age

DKA Management (page 3)

Type 1 Management (page 5)

Type 2 Management (page 8)

Obtain ADDITIONAL LABS to help identify type 2: (e)

- RPG >300, regardless of ketone OR - RPG <300, with positive ketones

RPG <300 with negative ketones

Type 1 or Type 2?

Look for OTHER TYPE 2 MARKERS/ RISKS:

- hypertension
- high triglycerides
- acanthosis nigracans
- strong family history
- ethnicity

(e) Additional labs to help identify type 2 diabetes

These values are consistent with type 2 (reference range = ARUP labs):

- c-peptide: > 3.5 ng/mL
- GAD AB: < 1.25 U/mL
- IA-2 < 0.8 U/mL

(b) Criteria for screening for childhood type 2 diabetes:

1. Age 10 (or at onset of puberty if puberty occurs at a younger age) AND
2. Overweight: BMI ≥85% for age and sex, AND
3. Any 2 of these risk factors: - Family history of type 2 diabetes in 1st or 2nd degree relative - High-risk race/ethnicity (American Indian, African American, Hispanic, or Asian/Pacific Islander) - Signs of insulin resistance or conditions associated with insulin resistance (acanthosis nigracans, hypertension, dyslipidemia, or polycystic ovarian syndrome (PCOS))

(c) Labs

All: - Random Plasma Glucose (RPG)

If symptomatic only: - Electrolytes, BUN, creatinine: to assess degrees of acidosis and dehydration - Urine: dip for glucose and ketone—confirm with serum values ASAP

(d) BMI

BMI table available through Check Your Health at
www.checkyourhealth.org

(a) Symptoms of diabetes

Early:
- polyuria
- polydipsia
- weight loss
- fatigue

Late:
- fruity breath
- vomiting
- abdominal pain
- Kussmaul respirations
- lethargy and confusion