NPEOC: Pediatric Inpatient Diabetes Mellitus - New Onset Insulin Dependent

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No: HC-PCS-PAC-S002

NURSING PRACTICE EXPECTATIONS OF CARE:

(71soc)
(To be used with Pediatric Acute Care Inpatient or Pediatric Intensive Care Inpatient Standards of Nursing Care)

STANDARD 1:

Assessment and Diagnosis - The nurse collects relevant health data and analyzes the data to determine diagnoses.

Assessment:

1. In addition to the Inpatient Standard, assess for the following:
   a. Signs and Symptoms of DKA including:
      i. Dry mucous membranes
      ii. Poor Perfusion
      iii. Increased Heart Rate
      iv. Nausea/Vomiting
      v. Abdominal Pain
      vi. Kussmaul respirations
      vii. Fruity or Acetone breath
      viii. Decreased Mental Status
      NOTE: If any signs or symptoms of DKA are present, immediately notify the physician.
   b. Developmental level of patient and general education level of identified family member(s)/caregiver(s) to be educated.
   c. Patient/family/caregiver(s) readiness to learn.

2. Reassessments
   a. Once insulin treatment is initiated, assess for signs and symptoms of hypoglycemia including:
      1. Shaking
      2. Sweating
      3. Pale skin
      4. Mood change
      5. Sleepy
   b. If CBG <100mg/dl with symptoms or <80mg/dl with or without symptoms initiate interventions per Standard of Care (see treatment section)

Labs/Diagnostics:

1. Obtain on admission
   a. CBG
   b. Test urine for ketones
   c. Anticipate additional admit labs including: VBG, HgA1C, TSH, free T4, anti-thyroid antibodies.
   d. If ordered, place IV at the same time labs are obtained.

2. Obtain CBG routinely before meals, bedtime and 0200 and whenever hypoglycemia suspected.
   NOTE: Patient/family/caregiver may use their own blood glucose meter for training purposes or as an adjunct to OHSU testing.

3. Check urine for ketones with each void.

STANDARD 2:

Outcome Identification - The nurse identifies individualized expected outcomes for the patient.

Expected Outcomes:
1. Parent(s)/caregiver(s) and patient - if developmentally appropriate* - are able to:
   
   A. Demonstrate blood glucose monitoring procedure and meter maintenance.
   
   B. State name, action, timing of insulins used.
   
   C. Demonstrate insulin administration and site selection.
   
   D. Demonstrate urine ketone test procedure.
   
   E. Recognize and treat low blood sugar (oral treatment and glucagon administration).
   
   F. Recognize signs/symptoms of high blood glucose.
   
   G. State basic sickday guidelines and how to reach diabetes care team during periods of illness.
   
   H. Demonstrate use of home Diabetes Care Record.
   
   I. State how/when to contact diabetes care team after discharge.

   * In general, children under the age of 8 are not ready to perform self-fingersticks and children under age 10 are not ready to perform insulin draw/injection procedures. Any child/adolescent who indicates unwillingness to do own fingerstick or injections should not be expected to do so.

STANDARD 3:

Develop and Implement Plan of Care - The nurse develops and implements a plan of care to assist the patient in achieving expected outcomes within the framework of Family Centered Care.

Procedures/Treatments:

1. Hypoglycemia Treatment Parameters: (<100 with symptoms or <80 with or without symptoms)
2. Weight Adjusted Treatment for patients alert and able to swallow:
   If weight < 50 lbs. (< 23 kg), give one of the following:
   - 3-4 oz. apple or orange juice
   - 2-3 packets sugar dissolved in 20-30 cc water
     Recheck blood glucose in 15 minutes.
     Repeat treatment every 15 minutes until blood glucose is above 100 mg/dl.
   Once above 100 mg/dl if it is more than 1 hour until next meal or snack, give patient an additional snack of carbohydrate and protein (example – 4 oz. milk)
   If weight > 50 lbs. (> 23 kg), give one of the following:
   - 6-8 oz. apple or orange juice
   - 3-4 packets sugar dissolved in 20-30 cc water
     Recheck blood glucose in 15 minutes.
     Repeat treatment every 15 minutes until blood glucose is above 100 mg/dl.
   Once above 100 mg/dl if it is more than 1 hour until next meal or snack, give patient an additional snack of carbohydrate and protein (example – ½ cup milk and 2-3 graham cracker squares).
3. Treatment for patient unable to swallow/unresponsive:
   Call HO STAT.
   If no IV access, administer Glucagon IM per physician order. Usual dose 0.5mg under 5 years of age, 1.0mg over 5 years.
   If IV access available, have D50 and sterile water available; dilute to D10 or D25 concentration and give per physician order. Usual dose D10 2-3 cc/kg, D25 1 cc/kg

Nutrition/IVs:

2. Verify meal trays and snacks for proper carbohydrate count per patient's meal plan; correct as needed. (Dietitian to provide nursing with copy of Meal Plan).
3. Monitor patient's completion of carbohydrates at meals/snacks; make substitutions as needed.
4. Notify registered dietician for feeding difficulties (e.g. persistent hunger, inability/refusal to complete carbohydrate portion of meals/snacks).
5. Maintain IV access as ordered.

Medications:

1. Time administration of insulin(s) to correspond with meal intake and LIP order:
   - Humalog or Novolog insulin* - give 5-15 minutes before a meal. Be sure meal tray is available before giving insulin.
     *Novolog or Humalog may be given after meals to toddlers who are using an insulin to carbohydrate ratio and have unpredictable appetites.
Regular insulin - give 30 minutes before a meal. Be sure meal tray is available before giving insulin.

2. Double check insulin dose with second RN. Second RN to observe insulin draw if 1st RN is giving insulin.

Document per Medication Safety Precautions (dcxp-m.01).

3. Draw/administer insulin per Insulin Single or Mix-Dose Draw and Insulin Injection Technique Diabetopics. (see Insulin section of Diabetes Notebook).

4. Use insulin syringe size and needle length identified by Diabetes Educator (e.g. 30unit, 50unit, 100unit, regular (1/2 inch) or short (5/16-inch) needle size).

5. Assure D50 and Glucagon are available in the pyxis.

Activity/Safety:

1. Assure proper disposal of all sharps; syringes and lancets in patient room.
2. Encourage activity ad lib.
3. Assure shoes/slippers/sandals worn whenever patient is out of bed/ambulatory.

Teaching/Discharge planning:

1. Verify referrals to Peds Diabetes Educator, Dietitian, Case Manager, Social Worker, Child Life Therapist, Schoolteacher.
2. Provide diabetes education materials to patient/family/caregiver(s);
   A. Diabetes Notebook and Diabetes Resource book (Pink Panther reading level 7-8th grade)
   B. A First Book for Understanding Diabetes. (reading level 5-6th grade)
3. Initiate documentation materials; Diabetes Record and Diabetes Health Education Record.
4. Initiate/Reinforce "survival skill" education:Demonstrate, and then observe patient/parent(s) or caregiver(s) perform blood glucose monitoring procedure. Have parent(s)/caregiver(s) perform at least one self-test before performing on patient.
   A. Demonstrate, and then observe patient/parent(s) or caregiver(s) perform insulin single and mix-draw procedure. (see Insulin section of Diabetes Notebook)
   B. Demonstrate, then observe patient/parent(s) or caregiver(s) perform insulin injection procedure. Have parent(s)/caregiver(s) give and receive at least one saline injection before giving patient an injection. (see Insulin section of Diabetes Notebook)
   C. Reinforce education by Diabetes Educator on insulin injection site/area selection and rotation: back of arms, mid-outer thighs, upper buttock/hips, or abdomen. Encourage use of 2 areas of body for injections during hospitalization.
   D. Reinforce education by Diabetes Educator on name/action/timing of patient's insulin(s). (see Insulin section of Diabetes Notebook).
   E. Demonstrate, and then observe patient/parent(s) or caregiver(s) perform urine ketone testing procedure.
   F. Demonstrate, then observe patient/parent(s) or caregiver(s) documentation of every blood glucose, insulin dose and urine ketone test results on Diabetes Care Record, in Diabetes Notebook, at bedside.
   H. Reinforce education by Diabetes Educator on causes, signs/symptoms and treatment of hypoglycemia. (see Low Blood Sugar section of Diabetes Notebook)
   I. Reinforce education by Diabetes Educator on signs/symptoms of hyperglycemia and sickday management guidelines. (see Sickdays section of Diabetes Notebook)
5. Document teaching provided on Diabetes Health Education Record.
6. Review discharge supplies with patient/parent(s) or caregiver(s); blood glucose meter/strips/lancets, syringes, insulin(s), Glucagon Emergency kit, low blood sugar treatment (glucose tabs/glucose jel), ketostix and sharps container.
7. Reinforce plan for telephone contact with Diabetes Team for insulin orders and/or emergency contact.
8. Reinforce plan for outpatient clinic follow-up visit, if scheduled prior to discharge.

STANDARD 4:

Evaluation - The nurse evaluates the patient's progress toward attaining expected outcomes and revises the plan of care accordingly.

A. As documented on the Diabetes Health Education Record, patient and caregivers have:

1. Demonstrated blood glucose monitoring procedure and meter maintenance.
2. Correctly verbalized name, action, timing of insulins used.
3. Demonstrated insulin administration and site selection.
4. Demonstrated urine ketone test procedure.
5. Verbalized treatment for low blood sugar (oral treatment and glucagon administration).
6. Verbalized signs/symptoms of high blood glucose.
7. Verbalized basic sick day guidelines and how to reach diabetes care team during periods of illness.
8. Demonstrated use of home Diabetes Care Record.
9. Stated how/when to contact diabetes care team after discharge.

Bibliography:


Related Forms:
- Diabetes Survival Skills-Pediatric (NU-4716)
- Standard of Nursing Care: Pediatric Emergency Services Diabetes Mellitus-DKA
- Standard of Nursing Care: Acute Care Pediatric Inpatient
- Standard of Nursing Care: Pediatric Critically Ill Inpatient
- Medication Safety Precautions (dch-p-m.01)
- Diabetes Record (NU-2114)

Supersedes:

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