TEACHING PLAN FOR: **Gastroesophageal Reflux (GER)**

POLICY:

1. Parent/caretakers are to be taught all of the material outlined in this document prior to discharge.

2. Certain content may be modified based on the family's assessed, individual needs.

DESIRED PATIENT OUTCOMES: All infants with GER will be discharged home to competent caregivers who:

1. are able to verbalize a basic understanding of the pathophysiology of GER.

2. are able to recognize and verbalize baseline behaviors associated with their infant's GER such as frequency of vomiting episodes, volume of emesis per episode.

3. are able to demonstrate non-medical interventions to prevent vomiting episodes including positioning after feeds.

4. are able to verbalize and understanding of medications the infant is receiving for GER.

5. are able to demonstrate the ability to accurately administer medications.

6. are able to demonstrate formula preparation and feeding techniques for their infant.

7. have attended an infant CPR training class if desired. CPR training is not a requirement for discharge but is strongly recommended for caregivers of infants at risk for aspiration.

TEACHING PLAN: Each of these categories will be reviewed with parents during infant's hospitalization, prior to discharge:

1. Pathophysiology of GER

   a. GER is characterized by excessive movement of stomach contents info the esophagus. The stomach contents may be acidic or non-acidic. The esophagus is the tube that carries food from the mouth to the stomach.

   b. As the stomach contents move up into the esophagus, they may be swallowed, vomited, aspirated or remain in the esophagus for an extended period of time. The term "aspirated" means that some of the stomach contents may be inhaled into the lungs and cause damage to the lungs. The risks of aspiration include apnea, choking, bradycardia, recurrent cough or wheezing, or pneumonia.

   c. Complications associated with GER include weight loss, poor growth and/or weight gain, esophagitis, irritability, malnutrition and developmental delays.

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Esophagitis is an irritation of the lining of the esophagus that causes an uncomfortable, burning sensation in the throat.

d. Many children outgrow GER by 10-18 months of age.

e. Surgical intervention (for example, Nissen fundoplication) to treat GER may become necessary under some circumstances. Most infants can be successfully treated without surgery.

2. Assessment of Infant's Feeding Behavior

Encourage and help parents to recognize their infant's baseline behaviors associated with GER so that they are able to accurately react to and report improvements or worsening of reflux to their private physician. Assist parents in assessing their infant by asking the following questions and/or providing then with the information:

a. What volume of formula does the infant usually take each feeding?

How frequently does the infant eat?

Overfeeding may causes emesis; also, small frequent feedings may help to decrease the episodes for some infants.

b. Inform parents of the type of formula their infant takes. It is important not to change formulas without their physician's orders as a different formula may cause vomiting and mask symptoms of GER (see Formula Preparation).

c. How frequently do parents/caregivers burp their infant during a feed? Some infants may need more frequent burping during a feeding to prevent or minimize vomiting.

d. What position do parents place their infant in during and after feedings?

Positioning with the head of the bed elevated is the best position for many infants with reflux. It helps to prevent reflux in some infants due to the elevation of the head above the stomach. Instruct parents that while not all infants respond to elevating the head of the bed, it is very important to place all infants in a side-lying position for sleeping.

Some infants with reflux may not tolerate sitting in an infant seat, car seat or swing for 1-2 hours after feeding due to the increased intra-abdominal pressure caused by the position or sitting (see Positioning). Bathing, vigorous rocking and other activities that might cause reflux are to be avoided right after feeding.

e. What is the infant's behavior during feeding? Is the infant relaxed or does he cry, pull away, choke, gag, or cough?

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It is important that parents recognize the infant's baseline behavior because changes in behavior may indicate either a positive response to medical treatment or the development of esophagitis or worsening GER. Changes in feeding behavior are reportable to their physician.

3. Emesis Assessments

   a. How frequently (episodes per day) does the infant vomit? Are there specific behaviors or environments that appear to induce vomiting? What is the appropriate volume of emesis with each episode (an entire feed, ½ ounce, etc.)?

   b. Does the infant appear to be in pain with emesis (crying, grimacing)?

      If the infant appears to be in pain, esophagitis may be a possibility and their physician must be notified.

   c. Is the vomiting forceful and projectile? Is is partially or undigested formula or is there red or brown colors in the emesis?

      Remind parents that metoclopromide is red and if their infant is on metoclopromide they may have to differentiate between the medication and possible blood in the emesis. If the forcefulness of vomiting changes or if there is blood in the emesis, parents must notify their physician.

4. Medications

   Infants with GER are often discharged home on medications. See Teaching Plan for: Medication Administration. Document medication teaching on Teaching Record for Gastroesophageal Reflux or Discharge Home with BPD.

5. Formula Preparation / Nutritional Concerns

   a. One teaspoon to one tablespoon of rice cereal may be added to each ounce of formula as ordered by the physician. Thickened feedings may help to reduce the amount of vomited material in some infants. Constipation may be a problem for some infants. Notify MD if this occurs.

   b. When feeds are thickened, a cross cut (+) may need to be cut in the nipple to help the formula flow easily. Experimenting may be necessary to ensure the hole is neither too large nor too small. Indications that the hole is too large are that the formula flows too quickly and may even cause the infant to choke on the excess formula in his mouth. Indications that the hole is too small are that the infant will have to work too hard to get the formula out and may become overtired, disinterested or frustrated and irritable.

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c. Inform parents that their infant is at risk for failure to thrive and that weight gain is of primary concern. For this reason, their infant may be put on higher calorie formula. They will be given written instructions for formula preparation and individual feeding plan.

d. Breastfed infants should continue on breastmilk as per physician order with additional support and encouragement for the mother. These infants can be offered thickened, expressed breastmilk after nursing.

6. Positioning

a. Positioning is individualized for each infant, taking into account the frequency and severity of reflux and its associated problems. The risk of reflux-associated-complications must be balanced against the risk of SIDS.

b. Positioning for treatment of reflux is based on the concept that gravity will help to reduce the amount of refluxed material in the esophagus and minimize reflux-associated complications. Elevating the head of the bed by approximately 20 degrees may benefit some infants. The goal is transition to a flat mattress level by the time of discharge to home.

c. Although the recommendation for newborns is to position supine, the supine position may be contraindicated for some infants with gastroesophageal reflux. A supported side-lying position may be preferable.

7. CPR Training

Inform parents of their infant's risk for choking and aspiration due to GER. Strongly encourage patients to attend infant CPR class. Instruct parents to keep emergency phone numbers next to the phone. Class instructors will sign off completion of class/certification if done.

APPROVAL: Nursing Standards Committee

EFFECTIVE DATE: 5/94

REVISION DATES: 2/96, 8/97, 6/99, 5/08