

A 6-week-old boy is brought to the physician with persistent, worsening vomiting over the past 2 weeks. The emesis occurs with every feed, is nonbilious, and is projectile in nature. The emesis has persisted even though his mother has tried small, frequent feeds and holding the infant upright after feeds. On physical examination, peristaltic waves are seen over the upper abdomen, and an olive-shaped mass is palpated in the right upper quadrant. Laboratory results are as follows:

Serum chemistry

Sodium	133 mEq/L
Potassium	2.8 mEq/L
Chloride	90 mEq/L
Bicarbonate	36 mEq/L
Blood urea nitrogen	18 mg/dL
Creatinine	0.6 mg/dL
Glucose	100 mg/dL

Which of the following is the most appropriate next step in management of this patient?

- ☐ A. Elective surgery later in childhood
- ☐ B. Immediate surgery
- ☐ C. Intravenous hydration and potassium replacement
- ☐ D. Oral metoclopramide
- ☐ E. Switch to a hydrolyzed formula

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Which of the following is the most appropriate next step in management of this patient?

- ☐ A. Elective surgery later in childhood [1%]
- ☐ B. Immediate surgery [19%]
- ☒ C. Intravenous hydration and potassium replacement [80%]
- ☐ D. Oral metoclopramide [0%]
- ☐ E. Switch to a hydrolyzed formula [0%]

Proceed to Next Item

Explanation:

User Id: [REDACTED]

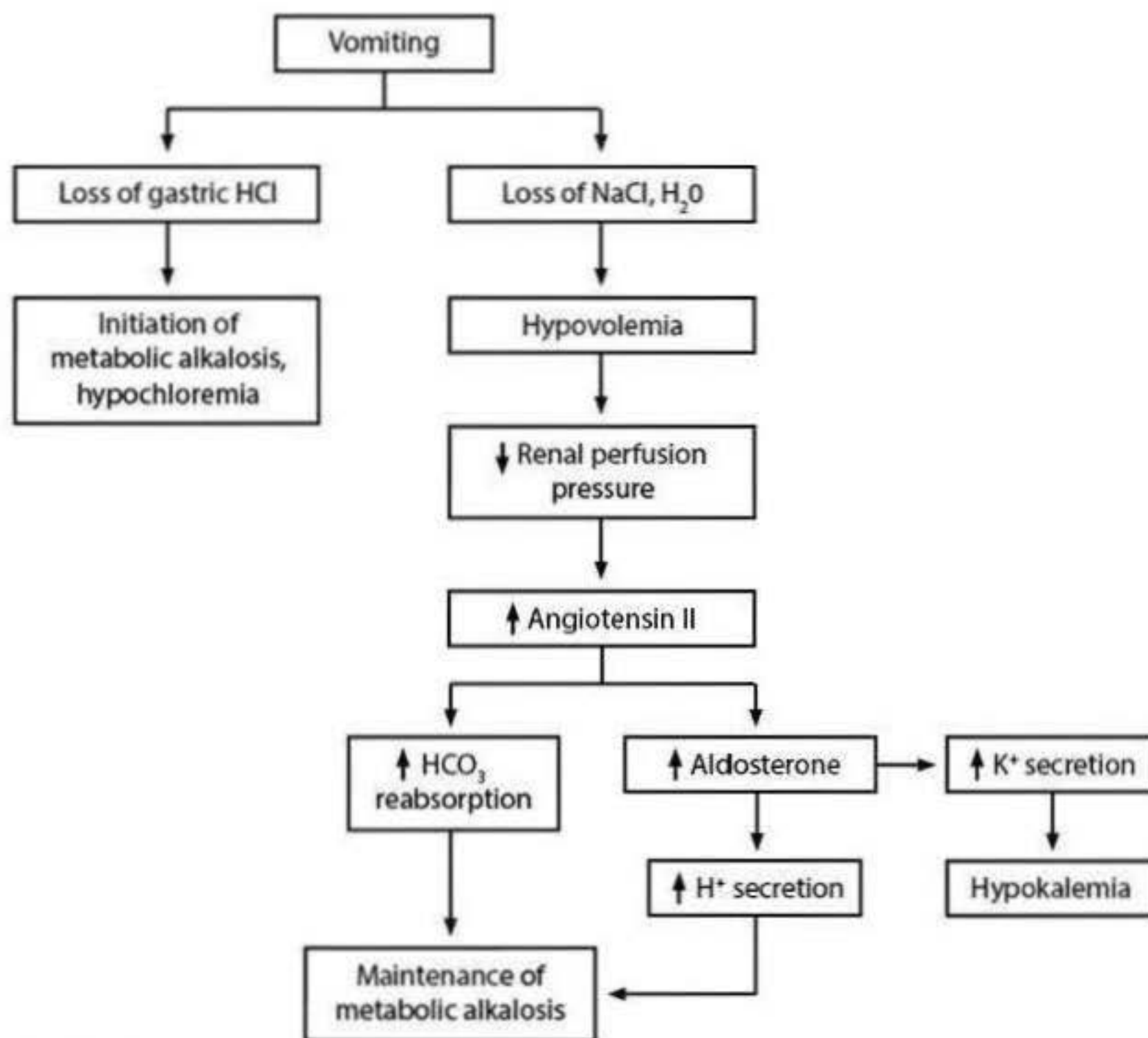
Laboratory derangements in pyloric stenosis



Explanation:

User Id: [REDACTED]

### Laboratory derangements in pyloric stenosis



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Infantile hypertrophic pyloric stenosis is most common in **first-born boys** and typically begins at **age 3-5 weeks** with **projectile, nonbilious vomiting** after every feed. Classic examination findings include a **palpable olive-shaped mass** in the right upper quadrant. A peristaltic wave moving from left to right across the upper abdomen may also be seen immediately prior to emesis. Laboratory abnormalities include **hypochloremic, hypokalemic metabolic alkalosis**. Diagnosis is made by abdominal ultrasound, which shows an **elongated, thickened pylorus**.

Although **pyloromyotomy** is the treatment of choice, infants with signs of dehydration or laboratory abnormalities should be admitted for intravenous rehydration and



Maintenance of  
metabolic alkalosis

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Although **pyloromyotomy** is the treatment of choice, infants with signs of dehydration or laboratory abnormalities should be admitted for intravenous rehydration and normalization of electrolytes prior to definitive surgical treatment. Normalization of electrolytes and correction of alkalosis prior to surgery (**Choice B**) have been shown to decrease the risk of **postoperative apnea** and improve overall outcomes.

(**Choice A**) Unlike reducible umbilical hernias and asymptomatic atrial septal defects, surgical repair of pyloric stenosis should not be delayed due to risk of worsening dehydration and poor weight gain.

(**Choice D**) Metoclopramide has no role in the treatment of pyloric stenosis as the emesis is a result of a fixed gastric outlet obstruction rather than poor gastric motility.

(**Choice E**) Milk-protein allergy may present with blood-streaked stools and non-projectile emesis. Switching the infant to a hydrolyzed formula would be appropriate if a milk-protein allergy is suspected, but it is inappropriate in this case.

**Educational objective:**

Infantile hypertrophic pyloric stenosis presents with projectile, nonbilious emesis and an olive-shaped abdominal mass. Prolonged vomiting causes a hypochloremic, hypokalemic metabolic alkalosis. Treatment consists of intravenous rehydration and normalization of electrolytes prior to pyloromyotomy to decrease the risk of postoperative apnea.

**References:**

1. **Electrolyte profile of pediatric patients with hypertrophic pyloric stenosis.**
2. **Pyloric stenosis in pediatric surgery: an evidence-based review.**



Media Exhibit

hypertrophic pyloric stenosis

