Pediatric Oncall Journal

DOI:https://doi.org/10.7199/ped.oncall.2026.71

IMAGES IN CLINICAL PRACTICE

PURPLE DISCOLORATION OF REGURGITATED GASTRIC CONTENTS IN AN INFANT UNDERGOING ESOMEPRAZOLE TREATMENT

Inês Mazeda, Sofia Branco, Inês Vivas, Catarina Martins, Maria José Dinis.

Department of Pediatrics and Neonatology, Unidade Local de Saúde da Póvoa de Varzim/Vila do Conde, Póvoa de Varzim, Portugal.

KEYWORDS

gastroesophageal reflux (disease), proton pump inhibitors, purple gastric discoloration.

ARTICLE HISTORY

Received 19 January 2025

Accepted 01 February 2025

A female infant, delivered via cesarean section at 38 weeks of gestation following an uneventful pregnancy, required only routine postnatal care. The infant was discharged on her second day post-birth, exclusively breastfeeding. At two months of age, the infant was evaluated for persistent regurgitation episodes, inadequate weight gain and irritability during feeding. A diagnosis of gastroesophageal reflux disease (GERD) was established, and treatment was initiated with a liquid dispersion of esomeprazole (1.5 mg daily), prepared from crushed solid dosage forms. At three months, the infant presented to the emergency department after two episodes of vomiting with visibly purple gastric contents (Figure 1). Caregivers reported no other concerning symptoms and the infant's physical examination revealed no abnormalities. Laboratory tests and imaging studies ruled out potential differential diagnoses, such as upper gastrointestinal bleeding or metabolic disorders. The compounded esomeprazole formulation was promptly discontinued, and therapy was transitioned to esomeprazole gastro-resistant granules for oral suspension. Within days, the purple discoloration of gastric contents ceased, and subsequent follow-ups confirmed the resolution of regurgitation symptoms and adequate weight gain.

What is the cause?

Gastroesophageal reflux (GER) is a physiological phenomenon observed in many infants and young children. It involves the retrograde movement of gastric contents into the esophagus, often leading to regurgitation. While GER is generally self-limiting, resolving by 12 to 18 months of age in most cases, complications such as poor weight gain, feeding difficulties, esophagitis and respiratory symptoms elevate the condition to gastroesophageal reflux disease.[1] Proton pump inhibitors (PPIs) like omeprazole and esomeprazole are widely used for treating GERD, despite limited approval for use in infants under one year.[2] The physicochemical stability of (es) omeprazole is pH-dependent, with rapid degradation occurring in acidic environments (pH <4), producing compounds with distinct dark purple pigmentation.[3]

Address for Correspondance: Inês Mazeda, Rua Padre Manuel Guimarães, Nº 99, R/C direito, 4700-284, Braga, Portugal.

Email: ines.mazeda@gmail.com

©2026 Pediatric Oncall

Figure 1. Purple regurgitated gastric contents around the mouth and neck region.



This case highlights a rare but documented adverse effect of improperly formulated esomeprazole preparations. The acidic gastric environment in infants can degrade esomeprazole into pigmented byproducts, resulting in the discoloration observed in regurgitated contents. Such degradation not only compromises the drug's bioavailability but also raises concerns among caregivers.[3] Clinicians prescribing PPIs for infants should consider using formulations designed to preserve drug stability, such as gastro-resistant granules, to optimize therapeutic outcomes. Additionally, educating caregivers about potential harmless visual changes, like discoloration, can mitigate unnecessary distress.[2]

Compliance with ethical standards

Funding: None

Conflict of Interest: None

References:

1. Vandenplas, Y., & Rudolph, C. D. (2009). Pediatric gastroesophageal reflux clinical practice guidelines. Journal of Pediatric Gastroenterology and Nutrition, 49(4), 498-547.
2. Tighe, M. P., Afzal, N. A., Bevan, A., et al. (2015). Pharmacological management of gastroesophageal reflux in children: An updated review. Pediatrics, 136(1), e153-e168.
3. Zerbib, F., & des Varannes, S. B. (2013). The stability and efficacy of proton pump inhibitors in pediatric use. Journal of Pediatric Gastroenterology and Nutrition, 57(5), 572-578.