Otherwise, there is no method to calculate how much electrolyte the patient actually received. Commercial ready-to-use oral electrolyte solutions to prevent dehydration or achieve rehydration include Pedialyte Solution (Ross) and Rehydralyte Solution (Ross). These products also contain dextrose or glucose. Infalyte Oral Solution (Bristol-Myers Squibb) contains electrolytes in a syrup of rice solids. The rice-based formula produces a lower osmotic effect than the dextrose- or glucose-based formulas and is thought to be more effective in reducing stool output and shortening the duration of diarrhea. The success of the commercial solutions is based on the physiologic design of the formulation.

Oral Colonic Lavage Solution

Traditionally, preparation of the bowel for procedures such as a colonoscopy consisted of administration of a clear liquid diet for 24 to 48 hours preceding the procedure, administration of an oral laxative such as magnesium citrate or bisacodyl the night before, and a cleansing enema administered 2 to 4 hours prior to the procedure. Typically, to circumvent hospitalization of the patient the night before the procedure, patients were allowed to perform this regimen at home. However, while the results have been satisfactory, that is, the bowel is cleared for the procedure, poor compliance with and acceptance of this regimen can cause problems during the procedure. Furthermore, additive effects of malnutrition and poor oral intake prior to the procedure can cause more patient problems.

Consequently, an alternative method to prepare the gastrointestinal tract has been devised. This procedure requires less time and dietary restriction and obviates the cleansing enemas. This method entails oral administration of a balanced solution of electrolytes with polyethylene glycol (PEG-3350-Electrolyte Solution), that is, Colyte (Alaven Pharmaceuticals). Before dispensing it to the patient, the pharmacist reconstitutes this powder with water, creating an iso-osmotic solution having a mildly salty taste. The PEG acts as an osmotic agent in the gastrointestinal tract, and the balanced electrolyte concentration results in virtually no net absorption or secretion of ions. Thus, a large volume of this solution can be administered without a significant change in water or electrolyte balance.

The formulation of this oral colonic lavage solution is as follows:

PEG-3350	240.00 g
Sodium sulfate	22.72 g
Sodium bicarbonate	6.72 g
Sodium chloride	5.84 g
Potassium chloride	2.98 g

In 4,000 mL disposable container

The recommended adult dose of this product is 4 L of solution before the gastrointestinal procedure. The patient is instructed to drink 240 mL of solution every 10 minutes until about 4 L is consumed. The patient is advised to drink each portion quickly rather than sipping it continuously. Usually, the first bowel movement will occur within 1 hour. Several regimens are used, and one method is to schedule patients for a midmorning procedure, allowing the patient 3 hours for drinking and a 1-hour waiting period to complete bowel evacuation.

To date, this approach to bowel evacuation has been associated with a low incidence of side effects (primarily nausea, transient abdominal fullness, bloating, and occasionally cramps and vomiting). Ideally, the patient should not have taken any food 3 to 4 hours before beginning to take the solution. In no case should solid foods be taken by the patient for at least 2 hours before the solution is administered. No foods except clear liquids are permitted after this product is administered and prior to the examination. The product must be stored in the refrigerator after reconstitution, and this aids somewhat in decreasing the salty taste of the product.

PEG-ES solutions are employed for unlabeled use in the management of acute iron overdose in children.

Magnesium Citrate Oral Solution

Magnesium citrate oral solution is a colorless to slightly yellow clear effervescent liquid having a sweet, acidulous taste and a lemon