Medications for Reflux and Other Upper GI Problems
by Susan Agrawal

H₂ Receptor Antagonists
H₂ Receptor Antagonists block histamine from bonding with H₂ receptors in the stomach. When histamine binds with H₂ receptors, stomach acid is produced. H₂ Receptor Antagonists bind with H₂ receptors instead, effectively blocking them from producing acid. Reducing acid in the stomach makes reflux less painful and irritating to the esophagus, but does not stop reflux or vomiting from occurring.

H₂ Receptor Antagonists are commonly available in liquid forms, which makes it easy to administer to children or individuals with feeding tubes. In general, they are most effective for mild reflux. They work relatively fast, within a few hours for most children, but their full effect may not be seen for a month or longer.

Common H₂ Receptor Antagonists include:
• Zantac (Ranitidine)
• Tagamet (Cimetidine)
• Pepcid (Famotidine)
• Axid (Nizatidine)

Proton Pump Inhibitors (PPIs)
Proton Pump Inhibitors block an enzyme in the stomach from producing acid. In short, they stop Proton Pumps from producing acid in the stomach. They reduce acid levels in the stomach, making reflux less painful and damaging, but do not stop reflux or vomiting.

Proton Pump Inhibitors must be absorbed in the small intestine and typically come in time-release capsules. Prevacid is now available in a quick-dissolving Solutab as well as a powder form. Zegerid is omeprazole mixed with a buffer solution into a powder that can be mixed into a liquid suitable for children and feeding tubes. Other PPIs may be mixed with sodium bicarb by a pharmacist to make a suspension. The contents of the capsules may also be sprinkled in apple juice or other slightly acidic foods and beverages. PPIs take several days to begin working, and require 6-8 weeks for erosions to heal and be fully effective.

Common Proton Pump Inhibitors include:
• Prilosec (omeprazole)
• Prevacid (lansoprazole)
• Aciphex (rabeprazole)
• Protonix (pantoprazole)
• Nexium (esomeprazole)
• Zegerid (omeprazole with sodium bicarbonate)

OTC Antacids
Over-the-counter Antacids typically include several ingredients to quickly relieve symptoms of acid reflux. These medications are only for short-term use, since many contain aluminum and other ingredients that are not safe for daily use in children. While these medications are over-the-counter, they should only be used in children as prescribed by a physician. They must be given at a different time than other acid reflux medications.

Common OTC Antacids suitable for children include:
• Maalox
• Mylanta
• Gaviscon

Carafate (Sucralfate)
Carafate is a medication that literally coats the esophagus and stomach to prevent damage from acid reflux. It is very useful for preventing acid-related damage in children whose acid cannot be controlled completely with other medications. It must be given apart from other medications or food, and cannot be given simultaneously with antacids containing aluminum.

Motility Medications
Several different medications may be prescribed to increase motility within the digestive tract. These medications may be helpful in reducing refluxing and vomiting in children with delayed gastric emptying or generalized slow gastric motility.

Reglan (metoclopramide) is the most commonly prescribed motility medication. It increases the strength of contractions within the upper GI tract and helps to strengthen the lower-esophageal sphincter. Reglan is known for causing cognitive and neurological side-effects in some children and should be used with caution in children with known neurological impairments.

Bethanachol is an older medication that increases contractions in the GI tract. It has fewer side effects than Reglan but is not as effective in many children.

Low dose Erythromycin employs a side effect of a common antibiotic to increase gastrointestinal motility. This medication is well-tolerated by many children.

Propulsid (Cisapride) is a very effective medication that increases motility within the GI tract. It has been withdrawn from the US market due to serious heart complications, but is available to certain children with very complex or serious motility disorders after extensive testing. A similar restricted program is available for distribution of this medication in Canada.
Motillium (Domperidone) is another effective medication that is only available outside of the United States. It is not FDA approved in the United States and there is some evidence of issues with heart problems. Children in Canada and other countries may be prescribed this medication for motility problems.

Other Medications that May be Helpful for Children with Complex GI Issues

Levsin (hyoscyamine sulfate) is an anti-spasmodic medication that reduces irregular stomach contractions in children with intense, uncoordinated contractions. It reduces motility overall and should not be used in children with significant gastroparesis. Donnatal is another medication that contains Levsin, along with several other medications, to calm intestinal spasms.

Elavil (amitriptyline) and other tri-cyclic antidepressants may be helpful for children with Visceral Hyperalgesia or other neuropathic or neurological conditions affecting the GI tract. This medication takes a minimum of one month before becoming effective and its use should be monitored closely by a specialist.

Neurontin (gabapentin) or Lyrica (pregabalin) are medications used to treat neuropathic pain. They may be effective in children with Visceral Hyperalgesia or neurological impairment that affects the gut, including post-fundoplication retching.

Zofran (ondansetron) or Phenergan (promethazine) are anti-nausea and anti-emetic drugs that help control vomiting, nausea, and retching. Phenergan should not be given to a child under age 2 because of the possibility of breathing problems.

Zelnorm (tegaserod maleate) is a medication primarily used for constipation or irritable bowel syndrome (IBS), particularly IBS with constipation. This medication works by helping the muscles in the digestive system coordinate contractions more effectively. In many children, making the gut work more effectively speeds up motility and relieves constipation or other issues related to slow motility. Some doctors also use this medication for children with motility problems of the stomach and small intestine, in hopes that it will regulate peristalsis in the stomach and small intestine and improve overall motility. It was withdrawn from the US market in 2007. The FDA is operating a compassionate use program for Zelnorm, but thus far no children have been able to obtain the medication.