



## PIC QUESTION OF THE WEEK: 2/26/07

**Q:** A drug interaction warning appears each time we enter potassium chloride and any anticholinergic compound into our pharmacy patient monitoring system. What is the basis for the continued appearance of this precaution?

**A:** Within the past few months, the Pharmaceutical Information Center has received several questions regarding possible drug interactions between potassium chloride and drugs possessing anticholinergic properties. These drugs included oxybutynin chloride (Ditropan), tolterodine tartrate (Detrol LA), atropine/diphenoxylate (Lomotil), and scopolamine (Transderm Scop). One even cautioned about the combined use of potassium chloride and albuterol/ipratropium (Combivent). The suggested mechanism for a drug interaction between oral potassium supplements and anticholinergic agents is probably based on their ability to decrease esophageal, gastric, and intestinal motility. This results in enhanced local concentration of potassium with resultant irritation and possible ulceration, stricture, and hemorrhage. All potassium preparations have the potential to produce gastrointestinal (GI) irritation. The most common adverse reactions reported with oral potassium tablets include nausea, vomiting, abdominal pain, diarrhea, and indigestion. There have also been reports of upper and lower GI obstruction, bleeding, ulceration, stricture, and perforation caused by potassium preparations. This primarily occurs in cases when decreased gastric transit prolongs tablet contact with the GI mucosa. Increased gastric transit time can occur in patients with structural abnormalities of the GI tract and those with gastroparesis (e.g. diabetic gastroparesis). An additional factor could be reduction in GI motility related to drugs possessing significant anticholinergic properties. Those with the highest risk of developing these lesions include the elderly, diabetics, patients with esophageal stricture or compression, and patients receiving concomitant anticholinergic therapy. The esophagus is a common site of GI injury and potassium chloride is the prototype drug associated with drug-induced esophagitis. Delayed transit of potassium chloride preparations in the esophagus can produce significant esophageal injury, especially at sites of stricture. Warnings about the possible development of ulcerative and/or stenotic lesions are included in the product information for one of the most popular oral potassium supplements. In addition, the product literature also contraindicates *the use of all solid potassium dosage forms in patients with structural, pathological, or pharmacologic-induced delay of tablet transit through the GI tract*. The frequency of this interaction has not been established; however, some caution should be exercised when combining potassium with these agents.

### References:

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