

CARISOPRODOL SAFETY

Background

Centrally-acting skeletal muscle relaxants (SMRs) are agents commonly used in the treatment of spasticity and acute painful musculoskeletal conditions of local origin, such as low back pain. By convention, SMRs are classified into a single group; however, the chemical structure, adverse effect profile, and potential for abuse among these agents differ significantly. The precise mechanisms of action by which SMRs exert their clinical effects are poorly understood, but are thought to be strongly associated with their sedative properties. **The evidence for their efficacy as adjunctive therapy in musculoskeletal conditions is extremely limited; however, better outcomes have been associated with SMRs in combination with acetaminophen or NSAIDs.**

Abuse Potential of SMRs

The abuse of SMRs in general has been reviewed in the literature. Carisoprodol is of particular concern and although it is unscheduled in Idaho at this time, it is a schedule IV controlled substance in several states including Arizona, Florida, Hawaii, New Mexico, and Oklahoma. **Drug utilization reviews conducted in other states have documented cases of physical dependence and the National Institute on Drug Abuse (NIDA) Warning Network reported that episodes of non-medical use and overdoses involving carisoprodol increased 164% from 1990 to 1996.**

Carisoprodol

Carisoprodol (Soma[®]), introduced in the late 1950s, is a widely prescribed SMR with similar efficacy to other members of its class. It is relatively inexpensive (see table on next page) and until recently, has been considered safe. However, beginning in the late 1980s, concern regarding its abuse has been growing. **Anecdotal descriptions of a “buzz” or euphoria have been documented with carisoprodol, particularly when combined with opioids. Additionally, documented cases of withdrawal symptoms, drug-seeking behavior, and fatalities related to carisoprodol have been reported.**

After oral administration, carisoprodol is metabolized in the liver to meprobamate, which is also biologically active. Meprobamate alone is a sedative-hypnotic formerly available under the trade names Miltown[®] or Equanil[®] (It is now only available generically). In the 1960s, meprobamate had a street value and was sold as “Uncle Milties” or “Bams.” Pharmacologically, it is related to the barbiturates and is a schedule IV controlled substance. **Similar to meprobamate, abusers of carisoprodol demonstrate signs of tolerance and reportedly suffer withdrawal symptoms of anxiety, tremors, and in some cases, hallucinations or seizures. Acute overdose may result in CNS depression, respiratory depression, coma and death.**

Comparison of SMRs

Brand	Generic	Usual Dose	Cost*		Comments
			Brand	Generic	
Lioresal®	Baclofen	10-20mg TID	\$21.32	\$12.99	GABA agonist; not as effective as other SMRs for pain
Soma®	Carisoprodol	350mg TID	\$106.01	\$13.99	Sedation and abuse potential
Parafon Forte DSC®	Chlorzoxazone	500mg TID	\$47.67	\$11.99	Hepatotoxicity; urine discoloration (red or orange)
Flexeril®	Cyclobenzaprine	10mg TID	\$35.99	\$7.99	Related to TCAs; do not use in cardiac patients
Dantrium®	Dantrolene	100mg TID	\$87.09	N/A	Hepatotoxicity; photosensitivity
Skelaxin®	Metaxalone	800mg TID	\$62.89	N/A	Least sedating; Do not use in hepatic dysfunction or patients with history of drug-induced anemia
Robaxin®	Methocarbamol	1000mg QID	\$22.99	\$7.99	May lower seizure threshold; some abuse potential reported
Norflex®	Orphenadrine	100mg BID	\$69.99	N/A	Related to diphenhydramine; anticholinergic
Zanaflex®	Tizanidine	4mg TID	\$43.99	\$27.99	Related to clonidine; anticholinergic

*Cost based on 30 tablets per www.drugstore.com (4/2004)

Recommendations

It is recommended that if SMRs are prescribed, physicians should keep in mind that published studies support the use of non-opioid analgesics in combination with them. Short-term use (< 2 weeks) is recommended as studies have not demonstrated long-term efficacy, and tolerance may develop rapidly. **The Idaho Medicaid Pharmacy and Therapeutics (P&T) Committee recently reviewed the SMRs and determined that insufficient evidence exists to establish one of these agents as superior; however, due to reports of abuse potential, carisoprodol use is discouraged.** Other SMRs with similar efficacy are preferable.

References:

1. Littrell RA, Hayes LR, Stillner V. Carisoprodol (Soma): A New and Cautious Perspective on an Old Agent. *South Med J* 1993;86(7)753-756.
2. Rust GS, Hatch R, Gums JG. Carisoprodol as a drug of abuse. *Arch Fam Med* 1993;2:429-432.
3. Elder NC. Abuse of Skeletal Muscle Relaxants. *Am Fam Physician* 1991;44(4)1223-1226.