

METAXALONE- metaxalone tablet
RedPharm Drug, Inc.

metaxalone

DESCRIPTION

Metaxalone Tablets, USP are available as an 800 mg, capsule shaped, scored pink tablet. Chemically, metaxalone, USP is 5-[(3,5-dimethylphenoxy)methyl]-2-oxazolidinone. The empirical formula is C₁₂H₁₅NO₃, which corresponds to a molecular weight of 221.25. The structural formula is:

[Metaxalone 800 mg - Chemical Structure]

Metaxalone, USP is a white to almost white, crystalline powder freely soluble in dichloromethane, soluble in methanol, sparingly soluble in ethanol and ethyl acetate, slightly soluble in toluene and isopropanol, insoluble in water and n-hexane.

Each tablet contains 800 mg metaxalone, USP and the following inactive ingredients: alginic acid, corn starch, ferric oxide red, copovidone, magnesium stearate, povidone, pregelatinized starch, sodium alginate.

CLINICAL PHARMACOLOGY

Mechanism of Action:

The mechanism of action of metaxalone in humans has not been established, but may be due to general central nervous system depression. Metaxalone has no direct action on the contractile mechanism of striated muscle, the motor end plate or the nerve fiber.

Pharmacokinetics:

The pharmacokinetics of metaxalone have been evaluated in healthy adult volunteers after single dose administration of metaxalone under fasted and fed conditions at doses ranging from 400 mg to 800 mg.

Absorption

Peak plasma concentrations of metaxalone occur approximately 3 hours after a 400 mg oral dose under fasted conditions. Thereafter, metaxalone concentrations decline logarithmically with a terminal half-life of 9.0 ± 4.8 hours. Doubling the dose of metaxalone from 400 mg to 800 mg results in a roughly proportional increase in metaxalone exposure as indicated by peak plasma concentrations (C_{max}) and area under the curve (AUC). Dose proportionality at doses above 800 mg has not been studied. The absolute bioavailability of metaxalone is not known.

The single-dose pharmacokinetic parameters of metaxalone in two groups of healthy volunteers are shown in Table 1.

Table 1: Mean (%CV) Metaxalone Pharmacokinetic Parameters

Dose (mg)

C_{max}
(ng/mL)

T_{max} (h)

AUC_∞
(ng•h/mL)

t_{1/2} (h)

CL/F
(L/h)

4001 983 (53) 3.3 (35) 7,479 (51) 9.0 (53) 68 (50)

8002 1,816 (43) 3.0 (39) 15,044 (46) 8.0 (58) 66 (51)

1Subjects received 1x400 mg tablet under fasted conditions (N=42)

2Subjects received 2x400 mg tablets under fasted conditions (N=59)

Food Effects

A randomized, two-way, crossover study was conducted in 42 healthy volunteers (31 males, 11 females) administered one 400 mg metaxalone tablet under fasted conditions and following a standard high-fat breakfast. Subjects ranged in age from 18 to 48 years (mean age = 23.5 ± 5.7 years). Compared to fasted conditions, the presence of a high fat meal at the time of drug administration increased C_{max} by 177.5% and increased AUC (AUC_{0-t}, AUC_∞) by 123.5% and 115.4%, respectively. Time-to-peak concentration (T_{max}) was also delayed (4.3 h versus 3.3 h) and terminal half-life was decreased (2.4 h versus 9.0 h) under fed conditions compared to fasted.

In a second food effect study of similar design, two 400 mg metaxalone tablets (800 mg) were administered to healthy volunteers (N=59, 37 males, 22 females), ranging in age from 18 to 50 years (mean age = 25.6 ± 8.7 years). Compared to fasted conditions, the presence of a high fat meal at the time of drug administration increased C_{max} by 193.6% and increased AUC (AUC_{0-t}, AUC_∞) by 146.4% and 142.2%, respectively. Time-to-peak concentration (T_{max}) was also delayed (4.9 h versus 3.0 h) and terminal half-life was decreased (4.2 h versus 8.0 h) under fed conditions compared to fasted conditions. Similar food effect results were observed in the above study when one metaxalone 800 mg tablet was administered in place of two metaxalone 400 mg tablets. The increase in metaxalone exposure coinciding with a reduction in half-life may be attributed to more complete absorption of metaxalone in the presence of a high fat meal (Figure 1).

[Figure 1 - Mean (SD) Concentrations of Metaxalone following an 800 mg Dose under Fasted and Fed Conditions.]

Distribution, Metabolism, and Excretion

Although plasma protein binding and absolute bioavailability of metaxalone are not known, the apparent volume of distribution (V/F ~ 800 L) and lipophilicity (log P = 2.42) of metaxalone suggest that the drug is extensively distributed in the tissues. Metaxalone is metabolized by the liver and excreted in the urine as unidentified metabolites. Hepatic Cytochrome P450 enzymes play a role in the metabolism of metaxalone. Specifically, CYP1A2, CYP2D6, CYP2E1, and CYP3A4 and, to a lesser extent, CYP2C8, CYP2C9, and CYP2C19 appear to metabolize metaxalone.

Metaxalone does not significantly inhibit major CYP enzymes such as CYP1A2, CYP2A6, CYP2B6, CYP2C8, CYP2C9, CYP2C19, CYP2D6, CYP2E1, and CYP3A4. Metaxalone does not significantly induce major CYP enzymes such as CYP1A2, CYP2B6, and CYP3A4 in vitro.

Pharmacokinetics in Special Populations

Age:

The effects of age on the pharmacokinetics of metaxalone were determined following single administration of two 400 mg tablets (800 mg) under fasted and fed conditions. The results were analyzed separately, as well as in combination with the results from three other studies. Using the combined data, the results indicate that the pharmacokinetics of metaxalone are significantly more affected by age under fasted conditions than under fed conditions, with bioavailability under fasted conditions increasing with age.

The bioavailability of metaxalone under fasted and fed conditions in three groups of healthy volunteers of varying age is shown in Table 2.

Table 2: Mean (%CV) Pharmacokinetic Parameters Following Single Administration of Two 400 mg Metaxalone Tablets (800 mg) under Fasted and Fed Conditions

	Younger Volunteers	Older Volunteers
Age (years)	25.6 ± 8.7	39.3 ± 10.8
N	59	21
Food	Fasted	Fasted Fed Fasted Fed

C_{max}
(ng/mL)

1,816
(43)

3,510
(41)

2,719
(46)

2,915
(55)

3,168
(43)

3,680
(59)

T_{max} (h)

3.0
(39)

4.9
(48)

3.0
(40)

8.7
(91)

2.6
(30)

6.5
(67)

AUC_{0-t}
(ng•h/mL)

14,531
(47)

20,683
(41)

19,836
(40)

20,482
(37)

23,797
(45)

24,340
(48)

AUC_∞
(ng•h/mL)

15,045
(46)

20,833
(41)

20,490
(39)

20,815
(37)

24,194
(44)

24,704
(47)

Gender:

The effect of gender on the pharmacokinetics of metaxalone was assessed in an open label study, in which 48 healthy adult volunteers (24 males, 24 females) were administered two metaxalone 400 mg tablets (800 mg) under fasted conditions. The bioavailability of metaxalone was significantly higher in females compared to males as evidenced by C_{max} (2,115 ng/mL versus 1,335 ng/mL) and AUC_∞ (17,884 ng•h/mL

versus 10,328 ng·h/mL). The mean half-life was 11.1 hours in females and 7.6 hours in males. The apparent volume of distribution of metaxalone was approximately 22% higher in males than in females, but not significantly different when adjusted for body weight. Similar findings were also seen when the previously described combined dataset was used in the analysis.

Hepatic/Renal Insufficiency:

The impact of hepatic and renal disease on the pharmacokinetics of metaxalone has not been determined. In the absence of such information, metaxalone should be used with caution in patients with hepatic and/or renal impairment.

INDICATIONS AND USAGE

Metaxalone is indicated as an adjunct to rest, physical therapy, and other measures for the relief of discomforts associated with acute, painful musculoskeletal conditions. The mode of action of this drug has not been clearly identified, but may be related to its sedative properties. Metaxalone does not directly relax tense skeletal muscles in man.

CONTRAINDICATIONS

Known hypersensitivity to any components of this product.

Known tendency to drug induced, hemolytic, or other anemias.

Significantly impaired renal or hepatic function.

WARNINGS

Metaxalone may enhance the effects of alcohol and other CNS depressants.

PRECAUTIONS

Metaxalone should be administered with great care to patients with pre-existing liver damage. Serial liver function studies should be performed in these patients.

False-positive Benedict's tests, due to an unknown reducing substance, have been noted. A glucose-specific test will differentiate findings.

Taking metaxalone with food may enhance general CNS depression; elderly patients may be especially susceptible to this CNS effect. (see CLINICAL PHARMACOLOGY: PHARMACOKINETICS and PRECAUTIONS: INFORMATION FOR PATIENTS section).

Information for Patients

Metaxalone may impair mental and/or physical abilities required for performance of hazardous tasks, such as operating machinery or driving a motor vehicle, especially when used with alcohol or other CNS depressants.

Drug Interactions

The sedative effects of metaxalone and other CNS depressants (e.g., alcohol,

benzodiazepines, opioids, tricyclic antidepressants) may be additive. Therefore, caution should be exercised with patients who take more than one of these CNS depressants simultaneously.

Carcinogenesis, Mutagenesis, Impairment of Fertility

The carcinogenic potential of metaxalone has not been determined.

Pregnancy

Reproduction studies in rats have not revealed evidence of impaired fertility or harm to the fetus due to metaxalone. Post marketing experience has not revealed evidence of fetal injury, but such experience cannot exclude the possibility of infrequent or subtle damage to the human fetus. Safe use of metaxalone has not been established with regard to possible adverse effects upon fetal development. Therefore, metaxalone tablets should not be used in women who are or may become pregnant and particularly during early pregnancy unless, in the judgement of the physician, the potential benefits outweigh the possible hazards.

NURSING MOTHERS

It is not known whether this drug is secreted in human milk. As a general rule, nursing should not be undertaken while a patient is on a drug since many drugs are excreted in human milk.

Pediatric Use

Safety and effectiveness in children 12 years of age and below have not been established.

ADVERSE REACTIONS

The most frequent reactions to metaxalone include:

CNS: drowsiness, dizziness, headache, and nervousness or "irritability";

Digestive: nausea, vomiting, gastrointestinal upset.

Other adverse reactions are:

Immune System: hypersensitivity reaction, rash with or without pruritus;

Hematologic: leukopenia; hemolytic anemia;

Hepatobiliary: jaundice.

Though rare, anaphylactoid reactions have been reported with metaxalone.

To report SUSPECTED ADVERSE REACTIONS, contact Dr.Reddy's Laboratories, Inc., at 1-888-375-3784 or FDA at 1-800-FDA-1088 or <http://www.fda.gov/medwatch>

OVERDOSAGE

Deaths by deliberate or accidental overdose have occurred with metaxalone, particularly in combination with antidepressants, and have been reported with this class of drug in combination with alcohol.

When determining the LD50 in rats and mice, progressive sedation, hypnosis and finally respiratory failure were noted as the dosage increased. In dogs, no LD50 could be determined as the higher doses produced an emetic action in 15 to 30 minutes.

Treatment - Gastric lavage and supportive therapy. Consultation with a regional poison control center is recommended.

DOSAGE AND ADMINISTRATION

The recommended dose for adults and children over 12 years of age is one 800 mg tablet three to four times a day.

HOW SUPPLIED

Metaxalone Tablets, USP 800 mg are available as pink, capsule shape scored tablet debossed with 'SG' on scored side and '323' on the other.

NDC 55111-650-01: Bottles of 100 Tablets

Store at 20° to 25°C (68° to 77°F); excursions permitted to 15° to 30°C (59° to 86°F) [See USP Controlled Room Temperature]. Dispense in well-closed, light-resistant containers.

You can ask your pharmacist or doctor for information about Metaxalone Tablets USP, or call 1-888-375-3784.

Rx Only

Manufactured by:
ScieGen Pharmaceuticals, Inc.
Hauppauge, NY 11788, USA

Manufactured for:
Dr.Reddy's Laboratories Inc.
Princeton, New Jersey 08540, USA

Issued: 06/17

PRINCIPAL DISPLAY PANEL

NDC: 67296-1577-5
METAXALONE
800MG

Rx Only

15 Tablets

Lot: 323002 1

Exp: 02/19

Usual adult dosage: See package insert
Store at controlled room temperature: 20-25 C (68-77 F)

Mfg By: ScieGen Pharmaceuticals Inc
Hauppauge NY 11788
55111-650-01

Dist. by: Redpharm Drug Eden Prairie, MN 55344

SIN 245924



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METAXALONE

metaxalone tablet

Product Information

Product Type	HUMAN PRESCRIPTION DRUG	Item Code (Source)	NDC:67296-1577(NDC:55111-650)
Route of Administration	ORAL		

Active Ingredient/Active Moiety

Ingredient Name	Basis of Strength	Strength
METAXALONE (UNII: 1NMA9J598Y) (METAXALONE - UNII:1NMA9J598Y)	METAXALONE	800 mg

Inactive Ingredients

Ingredient Name	Strength
FERRIC OXIDE RED (UNII: 1K09F3G675)	
COPOVIDONE (UNII: D9C330MD8B)	
POVIDONE, UNSPECIFIED (UNII: FZ989GH94E)	
ALGINIC ACID (UNII: 8C3Z4148WZ)	
STARCH, PREGELATINIZED CORN (UNII: O8232NY3SJ)	
SODIUM ALGINATE (UNII: C269C4G2ZQ)	
MAGNESIUM STEARATE (UNII: 70097M6I30)	

Product Characteristics

Color	pink	Score	2 pieces
Shape	OVAL	Size	19mm
Flavor		Imprint Code	SG;323
Contains			

Packaging

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:67296-1577-5	15 in 1 BOTTLE; Type 0: Not a Combination Product	01/01/2018	

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
ANDA	ANDA207466	01/01/2018	

Labeler - RedPharm Drug, Inc. (828374897)

Establishment

Name	Address	ID/FEI	Business Operations
RedPharm Drug, Inc.		828374897	repack(67296-1577)

Revised: 1/2022

RedPharm Drug, Inc.