

# TIGAN- trimethobenzamide hydrochloride injection

Par Pharmaceutical, Inc.

-----

## Tigan® (trimethobenzamide hydrochloride)

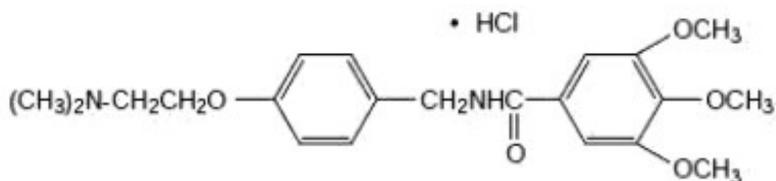
*Injectable*

For Intramuscular Use Only

Not for Use in Pediatric Patients

### DESCRIPTION

Chemically, trimethobenzamide hydrochloride (HCl) is N-[p-[2-(dimethylamino)ethoxy]benzyl]-3,4,5-trimethoxybenzamide monohydrochloride. It has a molecular weight of 424.93 and the following structural formula:



**Single Dose Vials:** Each 2-mL single-dose vial contains 200 mg trimethobenzamide hydrochloride compounded with 1 mg sodium citrate and 0.4 mg citric acid as buffers and pH adjusted to approximately 5.0 with sodium hydroxide.

**Multi-Dose Vials:** Each mL contains 100 mg trimethobenzamide hydrochloride compounded with 0.45% phenol as preservative, 0.5 mg sodium citrate and 0.2 mg citric acid as buffers and pH adjusted to approximately 5.0 with sodium hydroxide.

### CLINICAL PHARMACOLOGY

#### Mechanism of Action

The mechanism of action of *Tigan*® as determined in animals is obscure, but may involve the chemoreceptor trigger zone (CTZ), an area in the medulla oblongata through which emetic impulses are conveyed to the vomiting center; direct impulses to the vomiting center apparently are not similarly inhibited. In dogs pretreated with trimethobenzamide HCl, the emetic response to apomorphine is inhibited, while little or no protection is afforded against emesis induced by intragastric copper sulfate.

#### Pharmacokinetics

The pharmacokinetics of trimethobenzamide have been studied in healthy adult subjects. Following administration of 200 mg (100 mg/mL) Tigan IM injection, the time to reach maximum plasma concentration ( $T_{max}$ ) was about half an hour, about 15 minutes longer

for Tigan 300 mg oral capsule than an IM injection. A single dose of Tigan 300 mg oral capsule provided a plasma concentration profile of trimethobenzamide similar to Tigan 200 mg IM. The relative bioavailability of the capsule formulation compared to the solution is 100%. The mean elimination half-life of trimethobenzamide is 7 to 9 hours. Between 30 – 50% of a single dose in humans is excreted unchanged in the urine within 48 – 72 hours. The metabolic disposition of trimethobenzamide in humans is not known. Specifically, it is not known if active metabolites are generated in humans.

## **Special Populations**

### **Age**

The clearance of trimethobenzamide is not known in patients with renal impairment. However, it may be advisable to consider reduction in the dosing of trimethobenzamide in elderly patients with renal impairment considering that a substantial amount of excretion and elimination of trimethobenzamide occurs via the kidney and that elderly patients may have various degrees of renal impairment. (See **PRECAUTIONS: GENERAL and DOSAGE AND ADMINISTRATION**).

### **Gender**

Systemic exposure to trimethobenzamide was similar between men (N=40) and women (N=28).

### **Race**

Pharmacokinetics appeared to be similar for Caucasians (N=53) and African Americans (N=12).

### **Renal Impairment**

The clearance of trimethobenzamide is not known in patients with renal impairment. However, it may be advisable to consider reduction in the dosing of trimethobenzamide in patients with renal impairment considering that a substantial amount of excretion and elimination of trimethobenzamide occurs via the kidney. (See **PRECAUTIONS: GENERAL and DOSAGE AND ADMINISTRATION**).

## **INDICATIONS**

*Tigan*<sup>®</sup> is indicated for the treatment of postoperative nausea and vomiting and for nausea associated with gastroenteritis.

## **CONTRAINDICATIONS**

The injectable form of *Tigan*<sup>®</sup> is contraindicated in pediatric patients and in patients with known hypersensitivity to trimethobenzamide.

## **WARNINGS**

*Tigan*<sup>®</sup> may produce drowsiness. Patients should not operate motor vehicles or other dangerous machinery until their individual responses have been determined.

## Usage in Pregnancy

Trimethobenzamide hydrochloride was studied in reproduction experiments in rats and rabbits and no teratogenicity was suggested. The only effects observed were an increased percentage of embryonic resorptions or stillborn pups in rats administered 20 mg and 100 mg/kg and increased resorptions in rabbits receiving 100 mg/kg. In each study these adverse effects were attributed to one or two dams. The relevance to humans is not known. Since there is no adequate experience in pregnant or lactating women who have received this drug, safety in pregnancy or in nursing mothers has not been established.

## Usage with Alcohol

Concomitant use of alcohol with *Tigan*<sup>®</sup> may result in an adverse drug interaction.

## PRECAUTIONS

During the course of acute febrile illness, encephalitides, gastroenteritis, dehydration and electrolyte imbalance, especially in children and the elderly or debilitated, CNS reactions such as opisthotonos, convulsions, coma and extrapyramidal symptoms have been reported with and without use of *Tigan*<sup>®</sup> (trimethobenzamide hydrochloride) or other antiemetic agents. In such disorders caution should be exercised in administering *Tigan*<sup>®</sup>, particularly to patients who have recently received other CNS-acting agents (phenothiazines, barbiturates, belladonna derivatives). Primary emphasis should be directed toward the restoration of body fluids and electrolyte balance, the relief of fever and relief of the causative disease process. Overhydration should be avoided since it may result in cerebral edema.

The antiemetic effects of *Tigan*<sup>®</sup> may render diagnosis more difficult in such conditions as appendicitis and obscure signs of toxicity due to overdosage of other drugs.

## General

### Adjustment of Dose in Renal Failure

A substantial route of elimination of unchanged trimethobenzamide is via the kidney. Dosage adjustment should be considered in patients with reduced renal function including some elderly patients. (See **CLINICAL PHARMACOLOGY and DOSAGE AND ADMINISTRATION**).

### Geriatric Use

Clinical studies of trimethobenzamide hydrochloride did not include sufficient numbers of patients aged 65 and over to determine whether they respond differently from younger patients. Although there are studies reported in the literature that include elderly patients > 65 years old with younger patients, it is not known if there are differences in efficacy or safety parameters for elderly and non-elderly patients treated with trimethobenzamide. In general, dose selection for an elderly patient should be cautious, usually starting at the low end of the dosing range, reflecting the greater frequency of decreased hepatic, renal, or cardiac function, and of concomitant disease or other drug therapy.

This drug is known to be substantially excreted by the kidney, and the risk of toxic reactions to this drug may be greater in patients with impaired renal function. Because elderly patients are more likely to have decreased renal function, care should be taken in dose selection, and it may be useful to monitor renal function. (See **CLINICAL PHARMACOLOGY** and **DOSAGE AND ADMINISTRATION**).

## **ADVERSE REACTIONS**

There have been reports of hypersensitivity reactions and Parkinson-like symptoms. There have been instances of hypotension reported following parenteral administration to surgical patients. There have been reports of blood dyscrasias, blurring of vision, coma, convulsions, depression of mood, diarrhea, disorientation, dizziness, drowsiness, headache, jaundice, muscle cramps and opisthotonos. If these occur, the administration of the drug should be discontinued. Allergic-type skin reactions have been observed; therefore, the drug should be discontinued at the first sign of sensitization. While these symptoms will usually disappear spontaneously, symptomatic treatment may be indicated in some cases.

**For medical advice about adverse reactions contact your medical professional. To report SUSPECTED ADVERSE REACTIONS, contact Par Pharmaceutical at 1-800-828-9393 or FDA at 1-800-FDA-1088 (1-800-332-1088) or [www.fda.gov/medwatch](http://www.fda.gov/medwatch).**

## **DOSAGE AND ADMINISTRATION**

(See **WARNINGS** and **PRECAUTIONS**.)

Dosage should be adjusted according to the indication for therapy, severity of symptoms and the response of the patient.

### **Geriatric Patients**

Dose adjustment such as reducing the total dose administered at each dosing or increasing the dosing interval should be considered in elderly patients with renal impairment (creatinine clearance  $\leq 70$  mL/min/1.73m<sup>2</sup>). Final dose adjustment should be based upon integration of clinical efficacy and safety considerations. (See **CLINICAL PHARMACOLOGY** and **PRECAUTIONS**).

### **Patients with Renal Impairment**

In subjects with renal impairment (creatinine clearance  $\leq 70$  mL/min/1.73m<sup>2</sup>), dose adjustment such as reducing the total dose administered at each dosing or increasing the dosing interval should be considered. (See **CLINICAL PHARMACOLOGY** and **DOSAGE AND ADMINISTRATION**).

INJECTABLE, 100 mg/mL (Not for use in pediatric patients)

*Usual Adult Dosage*

2 mL (200 mg) t.i.d. or q.i.d. intramuscularly.

**NOTE:** The injectable form is intended for intramuscular administration only; it is not recommended for intravenous use.

Intramuscular administration may cause pain, stinging, burning, redness and swelling at the site of injection. Such effects may be minimized by deep injection into the upper outer quadrant of the gluteal region, and by avoiding the escape of solution along the route.

## **STORAGE**

Store between 20° to 25°C (68° to 77°F).

(See USP Controlled Room Temperature.)

## **HOW SUPPLIED**

Tigan® (trimethobenzamide hydrochloride) is available as follows:

NDC 42023-119-25 100 mg/mL in 2 mL Single Dose Vials, Pack of 25

## **Rx Only**

Distributed by:

**Par Pharmaceutical**

Chestnut Ridge, NY 10977

R01/2022

OS118J-01-90-03

3000358H

## **PRINCIPAL DISPLAY PANEL - 200 mg/2 mL Carton**

NDC 42023-**119**-25

**Tigan®**

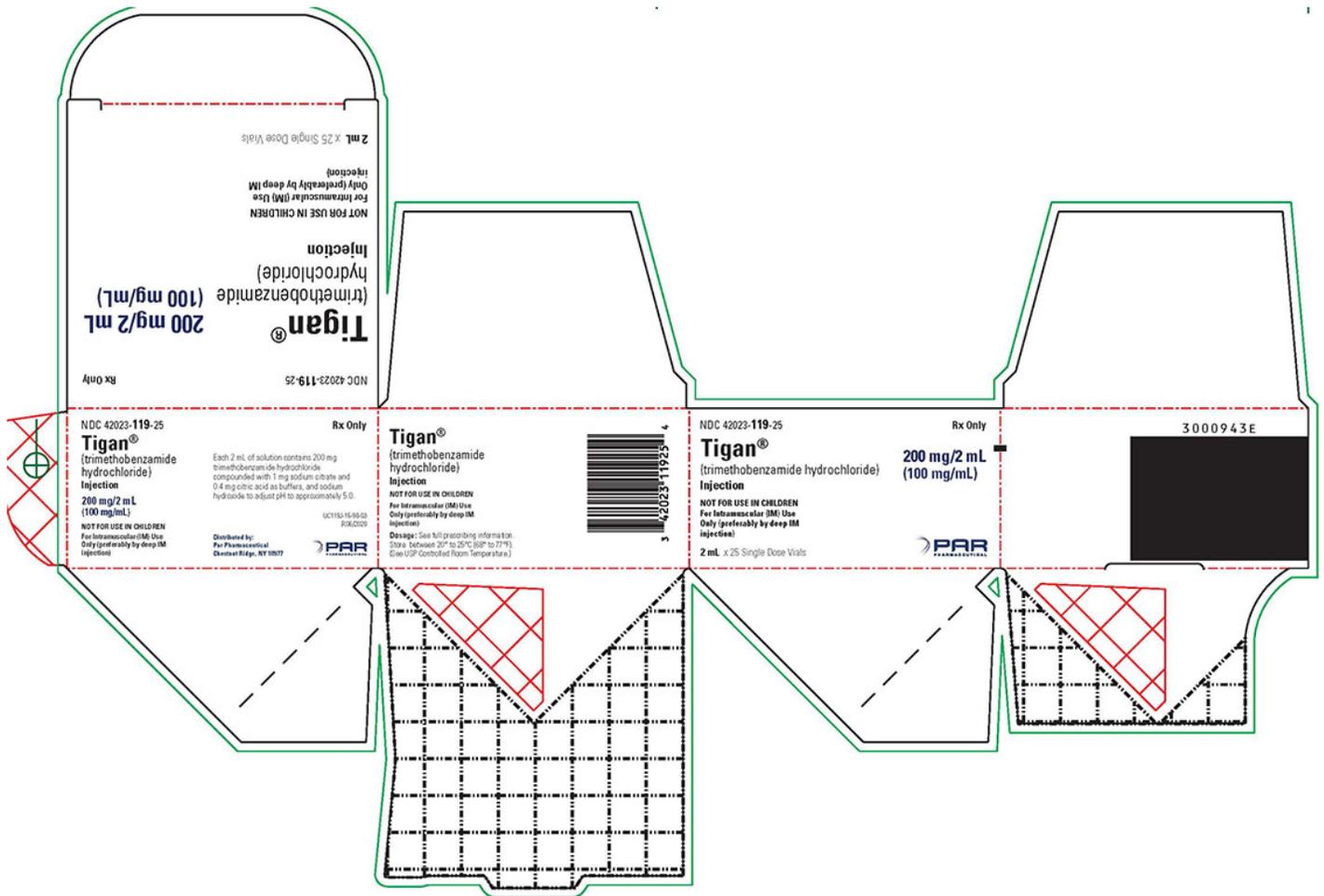
(trimethobenzamide hydrochloride) **Injection**

**200 mg/2 mL**

**(100 mg/mL)**

**For Intramuscular Use Only**

**2 mL** Single Dose Vial



# TIGAN

trimethobenzamide hydrochloride injection

## Product Information

<b>Product Type</b>	HUMAN PRESCRIPTION DRUG	<b>Item Code (Source)</b>	NDC:42023-119
<b>Route of Administration</b>	INTRAMUSCULAR		

## Active Ingredient/Active Moiety

Ingredient Name	Basis of Strength	Strength
<b>TRIMETHOBENZAMIDE HYDROCHLORIDE</b> (UNII: WDQ5P1SX7Q) (TRIMETHOBENZAMIDE - UNII:W2X096QY97)	TRIMETHOBENZAMIDE HYDROCHLORIDE	100 mg in 1 mL

## Inactive Ingredients

Ingredient Name	Strength
<b>SODIUM CITRATE</b> (UNII: 1Q73Q2JULR)	0.5 mg in 1 mL
<b>CITRIC ACID MONOHYDRATE</b> (UNII: 2968PHW8QP)	0.2 mg in 1 mL

## Packaging

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:42023-119-25	25 in 1 TRAY	08/01/2008	
1		2 mL in 1 VIAL, SINGLE-DOSE; Type 0: Not a Combination Product		

## Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NDA	NDA017530	08/01/2008	

**Labeler** - Par Pharmaceutical, Inc. (092733690)

## Establishment

Name	Address	ID/FEI	Business Operations
Par Sterile Products LLC		808402890	analysis(42023-119) , label(42023-119) , manufacture(42023-119) , pack(42023-119)

Revised: 3/2023

Par Pharmaceutical, Inc.