

CENTER FOR DRUG EVALUATION AND RESEARCH

APPLICATION: NDA 20449/S004

CONTENTS

	Included	Pending Completion	Not Prepared	Not Required
Approval Letter	X			
Tentative Approval Letter				X
Approvable Letter			X	
Final Printed Labeling	X			
Medical Review(s)			X	
Chemistry Review(s)			X	
EA/FONSI			X	
Pharmacology Review(s)			X	
Statistical Review(s)			X	
Microbiology Review(s)			X	
Clinical Pharmacology Biopharmaceutics Review(s)			X	
Bioequivalence Review(s)			X	
Administrative Document(s)	X			
Correspondence			X	

CENTER FOR DRUG EVALUATION AND RESEARCH

Approval Package for:

Application Number:NDA 20449/S004

Trade Name:Taxotere for Injection Concentrate

Generic Name:(docetaxel)

Sponsor: Rhone-Poulenc Rorer

Approval Date: January 6, 1998

Indication: Provides for the modification of the package insert to add certain adverse events which have been received through postmarketing surveillance.

CENTER FOR DRUG EVALUATION AND RESEARCH

Application Number: NDA 20449/S004

APPROVAL LETTER



Dir

Food and Drug Administration
Rockville MD 20857

NDA 20-449/S004

JAN - 6 1998

Rhone-Poulenc Rorer
500 Arcola Road
P.O. Box 5091
Collegeville, PA 19426-0995

Attention: Ronald F. Panner
Senior Director, Worldwide Regulatory Affairs

Dear Mr. Panner:

We acknowledge your supplemental new drug application dated November 21, 1997, received November 24, 1997, submitted under section 505(b) of the Federal Food, Drug, and Cosmetic Act for Taxotere (docetaxel) for Injection Concentrate.

The supplemental application provides for the modification of the package insert to add certain adverse events which have been received through postmarketing surveillance. The revised text is found under the ADVERSE REACTIONS: Ongoing Evaluation section of the package insert. The patient package insert is attached to the package insert and the patient package insert is referenced in the PRECAUTIONS section under Information for Patients to refer to attached Patient Information Leaflet.

We have completed the review of this supplemental application and have concluded that adequate information has been presented to demonstrate that the drug is safe and effective for use as recommended in the final printed labeling submitted on November 21, 1997. Accordingly, the supplemental application is approved effective on the date of this letter.

Should a letter communicating important information about this drug product (i.e., a "Dear Doctor" letter) be issued to physicians and others responsible for patient care, we request that you submit a copy of the letter to this NDA and a copy to the following address:

MEDWATCH, HF-2
FDA
5600 Fishers Lane
Rockville, MD 20852-9787

We remind you that you must comply with the requirements for an approved NDA set forth under 21 CFR 314.80 and 314.81.

NDA 20-449/S004

Page 2

If you have any questions, please contact Ann Staten, Project Manager, at 301-594-5770.

Sincerely yours,

/s/

1/5/98

Robert J. DeLap, M.D., Ph.D.

Director

Division of Oncology Drug Products

Office of Drug Evaluation I

Center for Drug Evaluation and Research

CENTER FOR DRUG EVALUATION AND RESEARCH

APPLICATION NUMBER: NDA 20449/S004

FINAL PRINTED LABELING

APPROVED
1-6-98

NDA 20-449
Taxotere[®] (docetaxel)
for Injection Concentrate

"FINAL PRINTED LABELING"

Package Insert

Labeling: Div File S-004
NDA No: 20-449 Re'd. 11-24-97
Reviewed by: Ann Stator 12-31-97

Caution: Federal law prohibits dispensing without prescription.

TAXOTERE® (docetaxel)

for Injection Concentrate

WARNING: Do not use TAXOTERE® for Injection Concentrate in patients with known hypersensitivity to docetaxel or to any of the components of the formulation. Appropriate management of complications is possible only when adequate diagnostic and treatment facilities are readily available.

The incidence of treatment-related mortality associated with TAXOTERE® therapy is increased in patients with abnormal liver function and in patients receiving higher doses (see WARNINGS).

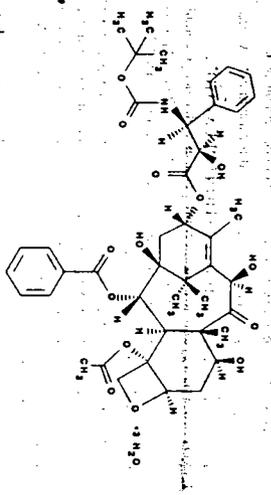
TAXOTERE® should generally not be given to patients with bilirubin > upper limit of normal (ULN) or to patients with SGOT (aspartate aminotransferase) > 1.5 x ULN, concurrent with elevations of bilirubin or abnormalities of transaminases concurrent with alkaline phosphatase are at increased risk for the development of grade 4 neutropenia, febrile neutropenia, infection, severe diarrhea, severe stomatitis, severe skin toxicity, and toxic death. Patients with isolated elevations of transaminase > 1.5 x ULN also had a higher rate of febrile neutropenia grade 4 but did not have an increased incidence of toxic death. Bilirubin, SGOT or SGPT, and alkaline phosphatase values should be obtained prior to each cycle of TAXOTERE® therapy and reviewed by the treating physician.

TAXOTERE® therapy should not be given to patients with neutrophil counts of < 1500 cells/mm³. In order to monitor the occurrence of neutropenia, which may be severe and result in infection, frequent blood cell counts should be performed on all patients receiving TAXOTERE®. Severe hypersensitivity reactions characterized by hypotension and/or bronchospasm, or generalized rash/erythema occurred in 0.3% of patients who received the recombinant dexamethasone premedication. Hypersensitivity reactions requiring discontinuation of the TAXOTERE® infusion were reported in five patients who did not receive premedication. These reactions resolved after discontinuation of the infusion and the administration of appropriate therapy. TAXOTERE® must not be given to patients who have a history of severe hypersensitivity reactions to TAXOTERE® or to other drugs formulated with polysorbate 80.

Severe fluid retention occurred in 6% of patients despite use of a 5-day dexamethasone premedication regimen. It was characterized by one or more of the following events: poorly tolerated peripheral edema, generalized edema, pleural effusion requiring urgent drainage, dyspnea at rest, cardiac tamponade, or pronounced abdominal distention (due to ascites).

DESCRIPTION

Docetaxel is an antineoplastic agent belonging to the taxoid family. It is prepared by semisynthesis beginning with a precursor extracted from the renewable needle biomass of yew plants. The chemical name for docetaxel is (2*S*)-N-carboxy-3-phenylisoxane-*N*-tert-butyl ester, 13-ester with 4β,20-epoxy-1,24,7β,10β,13α-heptahydroxytax-11-en-9-one 4-acetate 2-benzoyl, trihydrate. Docetaxel has the following structural formula:



Docetaxel is a white to almost-white powder with an empirical formula of C₄₂H₅₄N₂O₁₄·3H₂O, and a molecular weight of 861.9. It is highly lipophilic and practically insoluble in water. TAXOTERE® (docetaxel) for Injection Concentrate is a clear, non-pyrogenic, and is available in single-dose vials containing 20 mg (0.5 mL) or 80 mg (2.0 mL) docetaxel (anhydrous). Each mL contains 40 mg docetaxel (anhydrous) and 1040 mg polysorbate 80.

TAXOTERE® for Injection Concentrate requires dilution prior to use. A sterile, non-pyrogenic, single-dose diluent is supplied for that purpose. The diluent for TAXOTERE® contains 13% ethanol in Water for Injection, and is supplied in 1.5 mL (to be used with 20 mg TAXOTERE® for Injection Concentrate) and 6.0 mL (to be used with 80 mg TAXOTERE® for Injection Concentrate) vials.

CLINICAL PHARMACOLOGY

Docetaxel is an antineoplastic agent that acts by disrupting the microtubule network in cells that is essential for mitotic and interphase cellular functions. Docetaxel binds to free tubulin and promotes the assembly of tubulin into stable microtubules while simultaneously inhibiting their disassembly. This leads to the production of microtubule bundles without normal function and to the stabilization of microtubules, which results in the inhibition of mitosis in cells. Docetaxel's binding to microtubules does not alter the number of protofilaments in the bound microtubules, a feature which differs from most spindle poisons currently in clinical use.

HUMAN PHARMACOKINETICS

The pharmacokinetics of docetaxel have been evaluated in cancer patients after administration of 20 - 115 mg/m² in phase I studies. The area under the curve (AUC) was dose proportional. Following doses of 70 - 115 mg/m² with infusion times of one to two hours. Docetaxel's pharmacokinetic profile is consistent with a three-compartment pharmacokinetic model, with half-lives for the α, β, and γ phases of 4 min, 36 min, and 11.1 hr, respectively. The initial rapid decline represents distribution to the peripheral compartments and the late (terminal) phase is due, in part, to a relatively slow efflux of docetaxel from the peripheral compartment. Mean values for total body clearance and steady state volume of distribution were 21.1 L/m² and 113 L, respectively. Mean total body clearance for Japanese European/American populations dosed at 100 mg/m², suggesting no significant difference in the elimination of docetaxel in the two populations. A study of ¹⁴C-docetaxel was conducted in three cancer patients. Docetaxel was eliminated in both the urine and feces following oxidative metabolism of the *tert*-butyl ester group, but fecal excretion was the main elimination route. Within seven days, urinary and fecal excretion accounted for approximately 6% and 75% of the administered radioactivity, respectively. About 80% of the radioactivity recovered in feces is excreted during the first 48 hours as one major and 3 minor metabolites with very small amounts (less than 8%) of unchanged drug. Based on *in vitro* studies, isoenzymes of the

cytochrome P4503A (CYP 3A) subfamily appear to be involved in docetaxel metabolism.

A population pharmacokinetic analysis was carried out after TAXOTERE® treatment of 535 patients dosed at 100 mg/m². Pharmacokinetic parameters estimated by this analysis were very close to those estimated from phase I studies. The pharmacokinetics of docetaxel were not influenced by age or gender and docetaxel total body clearance was not modified by pretreatment with dexamethasone. In patients with clinical chemistry data suggestive of mild to moderate liver function impairment (SGOT and/or SGPT >1.5 times the upper limit of normal (ULN) concomitant with alkaline phosphatase >2.5 times ULN), total body clearance was lowered by an average of 27%, resulting in a 38% increase in systemic exposure (AUC). This average, however, includes a substantial range and there is, at present, no measurement that would allow recommendation for dose adjustment in such patients. Patients with combined abnormalities of transaminase and alkaline phosphatase should, in general, not be treated with TAXOTERE®.

In vitro studies showed that docetaxel is about 94% protein bound, mainly to α₂-acid glycoprotein, albumin, and lipoproteins. In three cancer patients, the *in vitro* binding to plasma proteins was found to be approximately 97%. Dexamethasone does not affect the protein binding of docetaxel.

CLINICAL STUDIES

The efficacy and safety of TAXOTERE® has been evaluated in advanced breast carcinoma patients in independent clinical studies at doses of 100, 75, and 60 mg/m².

Safety and Efficacy at 100 mg/m²: The safety and efficacy of TAXOTERE® have been evaluated in three phase II studies which were conducted in a total of 134 patients with anthracycline-resistant, locally advanced or metastatic breast carcinoma. Anthracycline resistance was defined as progressive disease on anthracycline for advanced disease or relapse on anthracycline equivalent therapy. In these studies, TAXOTERE® was administered at a 100 mg/m² dose given as a one-hour infusion every 3 weeks.

The overall response rate (ORR) considering all patients (intent-to-treat) was 41% and the complete response (CR) was 3%. The median survival time was 43 weeks. In the evaluable patients (see table), the ORR was 47% and the CR was 2.8%. Overall response rates (ORR), duration of response, and time to progressing are shown in the following table:

Efficacy of TAXOTERE® In Anthracycline-Resistant Breast Cancer Patients Treated At 100 mg/m ²	
Overall Response Rate	41% (95% C.I. (33 - 49))
Intent-to-Treat Patients (n=134)	
Evaluable Patients (n=105)*	47% (38 - 57)
Response Rate in Patients with Visceral Involvement	37%
Intent-to-Treat Patients (n=95)	
Evaluable Patients (n=76)*	43%
Median Response Duration**	6 months (2.1 - 17.5)
Median Time to Progression**	4 months (0.2 - 17.5)
Median Survival**	10 months (0.2 - 24.6)
1 Year Survival**	43%

*Evaluable patients include those meeting the study eligibility requirements and having received at least two cycles of TAXOTERE® unless disease progression occurred earlier.
**Intent-to-treat population
For the 134 anthracycline-resistant breast cancer patients who received TAXOTERE®, 127 had normal LFTs (see table for definition) at baseline, and 7 had elevated LFTs at baseline. Patients with elevated LFTs at baseline had an increased incidence of thrombocytopenia, infection, febrile neutropenia, and death considered at least possibly treatment related. The following table shows, the incidence of important hematologic adverse events during the study:

Hematologic Adverse Events In Anthracycline-Resistant Breast Cancer Patients Treated At 100 mg/m² With Normal Or Elevated Baseline Liver Function Tests

Adverse Event	Normal LFTs* at Baseline n = 127	Elevated LFT at Baseline n = 7
Neutropenia		
Any	99.2	100
Grade 4	<200 cells/mm ³	<200 cells/mm ³
Thrombocytopenia	94.5	100
Any		
Grade 4	11.8	71.4
Any	<100,000 cells/mm ³	14.3
Grade 4	<20,000 cells/mm ³	85.7
Anemia	<11 g/dL	
Infection***		
Any	25.2	71.4
Grade 3 and 4	7.1	57.1
Febrile Neutropenia****		
By Patient	22.0	42.9
By Course	4.0	14.3
Septic Death	0.8	14.3
Non-Septic Death	0	14.3
*Normal LFTs: Transaminases ≤ 1.5 times ULN or alkaline phosphatase ≤ 2.5 times ULN or isolated elevations of transaminases or alkaline phosphatase up to 5 times ULN.		
**Elevated LFTs: SGOT and/or SGPT >1.5 times ULN concurrent alkaline phosphatase >2.5 times ULN.		
***Incidence of infection requiring hospitalization and/or intravenous antibiotics was 13.4% (n=17) among the 127 patients with no LFTs at baseline. There were two patients with grade 2, one with grade 3, and fourteen with grade 4 neutropenia.		
****Febrile Neutropenia: ANC grade 4 with fever > 38° C with IV antibiotics and/or hospitalization.		

The following table shows important non-hematologic adverse events: the anthracycline-resistant breast cancer patients with normal and elevated LFTs at baseline.

Non-Hematologic Adverse Events In Anthracycline-Resistant Breast Cancer Patients Treated At 100 mg/m ² With Normal Or Elevated Baseline Liver Function Tests		
Adverse Event	Normal LFTs* at Baseline n = 127	Elevated LFT at Baseline n = 7
Acute Hypersensitivity Reaction Regardless of Premedication	11.8	0
Any	0	0
Severe	0	0
Fluid Retention***	56.7	57.1
Regardless of Type of Premedication	9.4	14.3
Any	56.7	57.1
Severe	9.4	14.3
With Recommended Premedication	n = 29	n = 3
Any	41.4	66.6
Severe	3.4	33.3
Neurosensory		
Any	66.1	42.9
Severe	7.1	0
Myalgia	35.4	57.1
Any	62.2	57.1
Severe	10.2	14.3
Asthenia	80.3	42.9
Any	22.8	28.6
Severe	55.9	71.4
Stomatitis	8.7	57.1
Any	55.9	71.4
Severe	8.7	57.1

*Normal LFTs: Transaminases ≤ 1.5 times ULN or alkaline phosphatase ≤ 2.5 times ULN or isolated elevations of transaminases or alkaline phosphatase up to 5 times ULN.

A 25% reduction in the dose of TAXOTERER® is recommended during subsequent cycles following severe neutropenia (< 500 cells/mm³) lasting 7 days or more, febrile neutropenia, or a grade 4 infection. In a TAXOTERER® (docetaxel) cycle (see DOSAGE AND ADMINISTRATION section).

Hypersensitivity Reactions: Hypersensitivity reactions may occur within a few minutes following initiation of a TAXOTERER® infusion. If minor reactions such as flushing or localized skin reactions occur, interruption of therapy is not required. More severe reactions, however, require the immediate discontinuation of TAXOTERER® and aggressive therapy. All patients should be premedicated with an oral corticosteroid prior to the initiation of the infusion of TAXOTERER® (see WARNINGS: Premedication Regimen).

Cutaneous: Localized erythema of the extremities with edema followed by desquamation has been observed. In case of severe skin toxicity, an adjustment in dosage is recommended (see DOSAGE AND ADMINISTRATION section). The discontinuation rate due to skin toxicity was 1.7%.

Fluid Retention: Severe fluid retention has been reported following TAXOTERER® therapy (see BOXED WARNING and ADVERSE REACTIONS). Patients should be premedicated with oral corticosteroids prior to each TAXOTERER® administration to reduce the incidence and severity of fluid retention (see DOSAGE AND ADMINISTRATION section). Patients with pre-existing effusions should be closely monitored from the first dose for the possible exacerbation of the effusions.

In patients who received the recommended premedication, moderate fluid retention occurred in 17.4% with severe fluid retention in 6% and a 1.7% discontinuation rate. Fluid retention was completely, but sometimes slowly, reversible following discontinuation of TAXOTERER® (median of 29 weeks). The median cumulative dose to onset of moderate or severe fluid retention was 705 mg/m² in patients receiving premedication. Patients developing peripheral edema may be treated with standard measures, e.g., salt restriction, oral diuretic(s).

Neurologic: Severe neurosensory symptoms (paresthesia, dysesthesia, pain) were observed among 7% of 134 patients with anthracycline-resistant breast cancer. When these occur, dosage must be adjusted. If symptoms persist, treatment should be discontinued (see DOSAGE AND ADMINISTRATION section). Patients who experienced neurotoxicity in clinical trials and for whom follow-up information on the complete resolution of the event was available had spontaneous reversal of symptoms within a median of 9 weeks from onset (range: 0 to 106 weeks) and only about 3.8% of patients required discontinuation due to neurotoxicity. Peripheral motor neuropathy mainly manifested as distal extremity weakness occurred in 13.4% (7.1% severe) of the 127 anthracycline-resistant breast cancer patients with normal LFTs. No neuromotor toxicity was reported in the 7 patients with elevated LFTs.

Asthenia: Severe asthenia has been reported in 11.1% of the patients but has led to treatment discontinuation in only 2.6% of the patients. Severe asthenia was reported in 23% of 134 patients with anthracycline-resistant breast cancer and 5.5% of the 786 cycles received. Symptoms of fatigue and weakness may last a few days up to several weeks and may be associated with deterioration of performance status in patients with progressive disease.

Information for Patients: For additional information, see the accompanying Patient Information Leaflet.

Drug Interactions: There have been no formal clinical studies to evaluate the drug interactions of TAXOTERER® with other medications. *In vitro* studies have shown that the metabolism of docetaxel may be modified by the concomitant administration of compounds that induce, inhibit or are metabolized by cytochrome P450 3A4, such as cyclosporine, terfenadine, ketoconazole, erythromycin, and troleanandomycin. Caution should be exercised with these drugs when treating patients receiving TAXOTERER® as there is a potential for a significant interaction.

Cardiogenicity, Mutagenicity, Impairment of Fertility: No studies have been conducted to assess the carcinogenic potential of TAXOTERER®. TAXOTERER® has been shown to be clastogenic in the *in vitro* chromosome aberration test in CHO-K₁ cells and in the *in vivo* micronucleus test in the mouse, but it did not induce mutagenicity in the Ames test, or the

CHO/Hprt gene mutation assays. TAXOTERER® produced no impairment of fertility in rats when administered in multiple i.v. doses of up to 0.3 mg/kg (about 1/50 the recommended human dose on a mg/m² basis), but decreased testicular weights were reported. This correlates with findings of a 10-cycle toxicity study (dosing once every 21 days for 6 months) in rats and dogs in which testicular atrophy or degeneration was observed at i.v. doses of 5 mg/kg in rats and 0.375 mg/kg in dogs (about 1/2 and 1/15 the recommended human dose on a mg/m² basis, respectively). An increased frequency of dosing in rats produced similar effects at lower dose levels.

Pregnancy: Pregnancy Category D (see WARNINGS section).

Nursing Mothers: It is not known whether TAXOTERER® is excreted in human milk. Because many drugs are excreted in human milk, and because of the potential for serious adverse reactions in nursing infants from TAXOTERER®, mothers should discontinue nursing prior to taking the drug.

Pediatric Use: The safety and effectiveness of TAXOTERER® in pediatric patients have not been established.

ADVERSE REACTIONS

There were 1495 patients enrolled in 37 clinical trials conducted in North America and Europe (624 breast carcinoma patients and 866 patients with other tumor types) who received TAXOTERER® at an initial dose of 100 mg/m² every 3 weeks. Five patients were not evaluable for toxicity since they discontinued TAXOTERER® treatment due to acute hypersensitivity reactions with the first infusion. At least 95% of these patients did not receive hematopoietic support. The following table lists adverse reactions that occurred in at least 5% of 1435 patients with normal liver function tests at baseline (Normal LFTs). Transaminases ≤ 1.5 times ULN or alkaline phosphatase ≤ 2.5 times ULN or isolated elevations of transaminases or alkaline phosphatase up to 5 times ULN as well as all deaths and adverse reactions in patients with abnormal liver function tests. These reactions were considered possibly or probably related to TAXOTERER®. The safety profile is generally similar in patients receiving TAXOTERER® for the treatment of breast carcinoma or for other tumor types.

Summary Of Adverse Events In Patients Receiving TAXOTERER® At 100 mg/m²

Adverse Event	Normal LFTs* n=1435		Elevated LFTs** n=55	
	at Baseline %	at Baseline %	at Baseline %	at Baseline %
Hematologic				
Neutropenia	2000 cells/mm ³ <500 cells/mm ³	96.3 76.0	96.0 86.0	96.5 98.1
Leukopenia	<4000 cells/mm ³ <1000 cells/mm ³	96.5 31.0	96.5 44.2	98.1 98.1
Thrombocytopenia	<100,000 cells/mm ³ <11 g/dL	7.5 8.4	7.3 8.4	7.3 8.4
Anemia	<11 g/dL	8.4	9.27	30.9
Febrile Neutropenia	<8 g/dL	11.8	26.4	26.4
Septic Death		1.8	3.6	3.6
Non-Septic Death		0.6	7.3	7.3
Infections				
Any		21.7	32.7	16.4
Severe		5.6	16.4	16.4
Fever in absence of Infection				
Any		30.2	50.9	50.9
Severe		1.7	9.1	9.1
Hypersensitivity Reactions with recommended premedication				
Any		n=229	n=6	n=6
Severe		15.7	0	0
Fluid Retention		0.9	0	0
Any		n=229	n=6	n=6
Severe		48.5	66.7	66.7
Neurosensory		5.2	33.3	33.3
Any		53.7	41.8	41.8
Severe		3.9	0	0
Neuromotor (primarily distal extremity weakness)				
Any		13.4	5.5	5.5
Severe		3.7	1.8	1.8
Cutaneous				
Any		58.5	61.8	61.8
Severe		5.6	10.9	10.9
Nail Changes				
Any		28.2	18.2	18.2
Severe		2.6	4.6	4.6
Gastrointestinal				
Nausea		40.4	40.0	40.0
Diarrhea		40.4	32.7	32.7
Vomiting		24.0	25.5	25.5
Allopecia		80.0	61.8	61.8
Asthenia				
Any		61.5	54.5	54.5
Severe		11.1	23.6	23.6
Stomatitis				
Any		42.3	47.3	47.3
Severe		5.3	14.5	14.5
Myalgia				
Any		19.4	18.2	18.2
Severe		1.4	1.9	1.9
Arthralgia				
Any		8.6	7.3	7.3
Severe		5.6	3.6	3.6
Infusion Site Reactions				
Any		5.2	3.6	3.6
Severe		0.6	0.6	0.6

* Normal LFTs: Transaminases ≤ 1.5 times ULN or alkaline phosphatase ≤ 2.5 times ULN or isolated elevations of transaminases or alkaline phosphatase up to 5 times ULN.

** Elevated LFTs: SGOT and/or SGPT > 1.5 times ULN concurrent with alkaline phosphatase > 2.5 times ULN.

Hematologic: Bone marrow suppression was the major dose-limiting toxicity of TAXOTERER®. Neutropenia is reversible and not cumulative. The median day to nadir was 8 days, while the median duration of severe neutropenia (<500 cells/mm³) was 7 days. Among patients with normal liver

in treated with TAXOTER®; severe neutropenia occurred in 76% of patients with severe cases being reported in 8.4% of the patients (ARININGS section).

neutropenia (<500 cells/mm³) with fever > 38°C with IV antibiotics hospitalization) occurred in 11.8% of the patients with normal liver function (3% of the cycles). Infectious episodes occurred in 21.7% of the patients (6.2% of the cycles) and were fatal in 1.6% of those treated with TAXOTER® (1.4% in breast cancer patients).

hypotension (<100/60 cells/mm³) occurred in 7.5% of the patients in the TAXOTER® infusion were reported in 5 patients of 1250 (not receive premedication). Severe hypersensitivity reactions characterized by hypotension and/or bronchospasm, or generalized rash, have been observed in only 0.9% of patients with normal liver function receiving the recommended premedication regimen and none of patients had to discontinue therapy.

events, including flushing, rash with or without pruritus, chest tightness, pain, dyspnea, drug fever, or chills, have been reported and if after discontinuing the infusion, and appropriate therapy (see ARININGS section).

Retention (see BOXED WARNING): Events such as edema and gain and, less frequently, pleural effusion, pericardial effusion or have been described. Among 229 patients with normal liver function receiving the recommended premedication, severe fluid retention was clearly/occasionally, resolving a median of 29 weeks (range: 0 to 42+ weeks) from the last TAXOTER® infusion.

Request: Reverse-type cutaneous reactions characterized by a rash including: erythema, mainly on the feet and/or hands, but also on the face or torso, usually associated with pruritus, have been observed. They generally occurred within one week after TAXOTER® infusion, occurred before the next infusion and were not disabling. Severe reactions, such as eruptions followed by desquamation, occurred in 5.6% of patients and rarely led to interruption or discontinuation of TAXOTER® treatment. Alopecia occurred in 80% of patients, and it was in 61.8% of patients.

mail disorders occurred in 2.6% of the patients. These reactions characterized by hypo- or hypopigmentation, and occasionally by alopecia (in 0.8% of patients) and pain.

Abuse: Neurosensory symptoms characterized by paresthesia, dysesthesia or pain (including burning sensation) have been reported in patients taking TAXOTER®. Severe reactions were observed in 3.9% of patients and minor events characterized mainly by weakness have been reported in 3.7% of the patients.

rolidinal: Gastrointestinal reactions (nausea, and/or vomiting, or diarrhea) were generally mild to moderate and severe reactions occurred in 8.2% of the patients. Somnolence was reported in 42.3% of patients receiving TAXOTER®. Severe reactions were observed in 5.3% of patients.

liver: Hypotension occurred in 3.6% of the patients; 3.4% of patients had treatment. Clinically meaningful events such as heart failure, sinus bradycardia, atrial flutter, dizziness, unstable angina, pulmonary edema, hypotension occurred rarely.

Site Reactions: Infusion site reactions were generally mild and used of hypopigmentation, inflammation, redness or dryness of the phlebitis, extravasation, or swelling of the vein.

Hepatic: In patients with normal LFTs at baseline, bilirubin values greater than the ULN occurred in 8.9% of patients. Increases in SGOT or SGPT > 1.5 times the ULN, or alkaline phosphatase > 2.5 times ULN, were observed in 18.1% and 7.6% of patients, respectively. During the study, increases in SGOT and/or SGPT > 1.5 times ULN concomitant with alkaline phosphatase > 2.5 times ULN occurred in 4.5% of patients with normal LFTs at baseline. (Whether these changes were related to the drug or underlying disease has not been established.)

Ongoing Evaluation: The following serious adverse events of uncertain relationship to TAXOTER® have been reported:

- Body as a whole: abdominal pain, diffuse pain, chest pain
- Cardiovascular: atrial fibrillation, deep vein thrombosis, ECG abnormalities, thrombophlebitis, pulmonary embolism, syncope, tachycardia, myocardial infarction
- Digestive: constipation, duodenal ulcer, esophagitis, gastrointestinal hemorrhage, intestinal obstruction, ileus, gastrointestinal perforation, neutropenic enterocolitis
- Nervous: confusion
- Respiratory: dyspnea, acute pulmonary edema, acute respiratory distress syndrome
- Urogenital: renal insufficiency

OVERDOSAGE

There is no known antidote for TAXOTER® overdose. In case of overdose, the patient should be kept in a specialized unit where vital functions can be closely monitored. Anticipated complications of overdose include: bone marrow suppression, peripheral neurotoxicity, and mucositis. There were two reports of overdose. One patient received 1.50 mg/m² and the other received 200 mg/m² as one-hour infusion. Both patients experienced severe neutropenia, mild asthenia, cutaneous reactions, and mild parasthesia, and recovered without incident.

In mice, lethality was observed following single i.v. doses that were 21.54 mg/kg (about 4.5 times the recommended human dose on a mg/m² basis); neurotoxicity associated with paralysis, non-contraction of hind limbs and myelin degeneration was observed in mice at 48 mg/kg (about 1.5 times the recommended human dose on a mg/m² basis). In male and female rats, lethality was observed at a dose of 20 mg/kg (comparable to the recommended human dose on a mg/m² basis) and was associated with abnormal mitosis and necrosis of multiple organs.

DOSEAGE AND ADMINISTRATION

For treatment of patients with locally advanced or metastatic carcinoma of the breast after progression during anthracycline-based therapy for metastatic disease or relapse during anthracycline-based adjuvant therapy, the recommended dose of TAXOTER® is 60 - 100 mg/m² administered intravenously over 1 hour every three weeks.

Premedication Regimen: All patients should be premedicated with oral corticosteroids such as dexamethasone 16 mg per day (e.g., 8 mg BID) for 5 days starting 1 day prior to TAXOTER® administration in order to reduce the incidence and severity of fluid retention as well as the severity of hypersensitivity reactions (see WARNINGS and PRECAUTIONS sections).

Doseage Adjustments During Treatment: Patients who are dosed initially at 100 mg/m² and who experience either febrile neutropenia, neutrophils < 500 cells/mm³ for more than one week, severe or cumulative cutaneous reactions, or severe peripheral neuropathy during TAXOTER® therapy should have the dosage adjusted from 100 mg/m² to 75 mg/m². If the patient continues to experience these reactions, the dosage should either be decreased from 75 mg/m² to 55 mg/m² or the treatment should be discontinued. Conversely, patients who are dosed initially at 60 mg/m² and who do not experience febrile neutropenia, neutrophils < 500 cells/mm³ for more than one week, severe or cumulative cutaneous reactions, or severe peripheral neuropathy during TAXOTER® therapy may tolerate higher doses.

Special Populations:

Hepatic Impairment: Patients with bilirubin > ULN should generally not receive TAXOTER®. Also, patients with SGOT and/or SGPT > 1.5 x ULN concomitant with alkaline phosphatase > 2.5 x ULN should generally not receive TAXOTER®.

Children: The safety and effectiveness of docetaxel in pediatric patients below the age of 16 years have not been established.

Elderly: No dosage adjustments are required for use in elderly.

PREPARATION AND ADMINISTRATION PRECAUTIONS

TAXOTER® is a cytotoxic anticancer drug and, as with other potentially toxic compounds, caution should be exercised when handling and preparing TAXOTER® solutions. The use of gloves is recommended. Please refer to Handling and Disposal section.

If TAXOTER® concentrate, premix solution, or infusion solution should come into contact with the skin, immediately and thoroughly wash with soap and water. If TAXOTER® concentrate, premix solution, or infusion solution should come into contact with mucosa, immediately and thoroughly wash with water.

TAXOTER® for Injection Concentrate requires dilution prior to administration. Please follow the preparation instructions provided below. Note: Both the TAXOTER® for Injection Concentrate and the diluent vials contain an overfill.

1. Preparation of the Premix Solution
 - A. Remove the appropriate number of vials of TAXOTER® for Injection Concentrate and diluent from the refrigerator. Allow the vials to stand at room temperature for approximately 5 minutes.
 - B. Aseptically withdraw the entire contents of the diluent vial into a syringe and transfer it to the vial of TAXOTER® for Injection Concentrate.
2. Information regarding fill volumes is listed below:

Strength	Vial Content	Diluent Vial
TAXOTER® 20 mg	23.6 mg / 0.59 mL	1.83 mL
TAXOTER® 80 mg	94.4 mg / 2.36 mL	7.33 mL
3. This will assure a final premix concentration of 10 mg docetaxel/mL. Gently rotate each premix solution vial for approximately 15 seconds to assure full mixture of the concentrate and diluent.
4. The TAXOTER® premix solution (10 mg docetaxel/mL) should be clear; however, there may be some foam on top of the solution due to the polysorbate 80. Allow the premix solution to stand for a few minutes to allow any foam to dissipate. It is not required that all foam dissipate prior to continuing the preparation process.

1. Preparation of the Infusion Solution
 - A. Aseptically withdraw the required amount of TAXOTER® premix solution (10 mg docetaxel/mL) with a calibrated syringe and inject the required volume of premix solution into a 250 mL infusion bag or bottle of either 0.9% Sodium Chloride solution or 5% Dextrose solution to produce a final concentration of 0.3 to 0.9 mg/mL.
 - B. If a dose greater than 240 mg of TAXOTER® is required, use a larger volume of the infusion vehicle so that a concentration of 0.9 mg/mL TAXOTER® is not exceeded.
2. Thoroughly mix the infusion by manual rotation.
3. As with all parenteral products, TAXOTER® should be inspected visually for particulate matter or discoloration prior to administration whenever the solution and container permit. If the TAXOTER® for Injection premix solution or infusion solution is not clear or appears to have precipitation, the solution should be discarded.

or plastic bags (polypropylene, polyolefin) and administered through polyethylene-lined administration sets.

Stability: Unopened vials of TAXOTER® are stable until the expiration date indicated on the package when stored refrigerated, 2° to 8°C (36° to 46°F), and protected from bright light. Freezing does not adversely affect the product.

HOW SUPPLIED

TAXOTER® for Injection Concentrate is supplied in a single-dose vial as a sterile, pyrogen-free, non-aqueous, viscous solution with an accompanying sterile, non-pyrogenic, diluent (13% ethanol in Water for Injection). The following strengths are available:

TAXOTER® 80 MG (NDC 0075-9001-300)
 TAXOTER® (docetaxel) 80 mg Concentrate for Infusion: 80 mg docetaxel in 2 mL polysorbate 80 (Fill: 94.4 mg docetaxel in 2.36 mL polysorbate 80) and diluent for TAXOTER® 80 mg, 13% (w/w) ethanol in Water for Injection (Fill: 7.33 mL). Both items are in a blister pack in one carton.

TAXOTER® 20 MG (NDC 0075-9001-20)
 TAXOTER® (docetaxel) 20 mg Concentrate for Infusion: 20 mg docetaxel in 0.5 mL polysorbate 80 (Fill: 23.6 mg docetaxel in 0.59 mL polysorbate 80) and diluent for TAXOTER® 20 mg, 13% (w/w) ethanol in Water for Injection (Fill: 1.83 mL). Both items are in a blister pack in one carton.

Storage: Store refrigerated, 2° to 8°C (36° to 46°F). Retain in the original package to protect from bright light.

TAXOTER® premix solution (10 mg TAXOTER®/mL) and fully prepared TAXOTER® infusion solution (in either 0.9% Sodium Chloride solution or 5% Dextrose solution) should be used as soon as possible after preparation. However, the premix solution is stable for 8 hours either at room temperature, 15° to 25°C (59° to 77°F), or stored refrigerated, 2° to 8°C (36° to 46°F).

Handling and Disposal: Procedures for proper handling and disposal of anticancer drugs should be considered. Several guidelines on this subject have been published. There is no general agreement that all of the procedures recommended in the guidelines are necessary or appropriate.

REFERENCES

1. OSHA Work-Practice Guidelines for Personnel Dealing with Cytotoxic (Antineoplastic) Drugs. *Am J Hosp Pharm.* 1986; 43(5): 1191-1204.
2. American Society of Hospital Pharmacists. Technical Assistance Bulletin on Handling Cytotoxic and Hazardous Drugs. *Am J Hosp Pharm.* 1990; 47(95): 1033-1049.
3. AMA Council Report: Guidelines for Handling Parenteral Antineoplastics. *JAMA.* 1985; 253(11): 1590-1592.
4. Oncology Nursing Society Clinical Practice Committee: Cancer Chemotherapy Guidelines, Module II - Recommendations of Nursing Practice in the Acute Care Setting. *ONS.* 1988; 2:14.

RHÔNE-POULENC RORER PHARMACEUTICALS INC.
 COLLEGEVILLE, PA 19428
 IN-5493C

Rev. 7/97

OTEDP must be used for patients who have a history of...
 of mitosis in cells Docetaxel's binding to microtubules does not alter the...
 number of appendages in the bound microtubules, a feature which dif...
 Intent-to-Treat Patients (n=134) Overall Response Rate (95% CI) 41% (31, 49)

Date	Date	Date	Date
Day 1	Day 2	Day 3	Day 4
Take Dexamethasone tablets 2 times per day AM/PM	Treatment Day Take Dexamethasone tablets 2 times per day AM/PM	Take Dexamethasone tablets 2 times per day AM/PM	Take Dexamethasone tablets 2 times per day AM/PM
Day 5	Day 6	Day 7	Day 8
Take Dexamethasone tablets 2 times per day AM/PM	Take Dexamethasone tablets 2 times per day AM/PM	Take Dexamethasone tablets 2 times per day AM/PM	Take Dexamethasone tablets 2 times per day AM/PM

CENTER FOR DRUG EVALUATION AND RESEARCH

APPLICATION NUMBER: NDA 20449/S004

ADMINISTRATIVE DOCUMENTS

CSO NDA LABELING REVIEW OF PACKAGE INSERT

NDA: 20-449 /004

DATE OF SUBMISSION: SLR-004 **November 24, 1997 (Changes Being Effected)**

DATE OF REVIEW: December 19, 1997

DRUG: Taxotere® (docetaxel) for Injection Concentrate

SPONSOR: Rhone-Poulenc Rorer

This supplement provides for a revised package insert. In accordance with 21 CFR §314.70(c)(2)(i), as changes being effected, the package insert is modified to add certain adverse events which have been received through postmarketing surveillance.

I have reviewed the new labeling, comparing it with the previous labeling supplement (PA dated 5/14/96) and find it acceptable. The changes are as follows:

Changes in the package insert:

1. Per our request, the patient package insert is attached to the package insert and the patient package insert is referenced in the PRECAUTIONS section under Information for Patients to refer to attached patient package insert.
2. The established name appears on the first column, page two to satisfy labeling regulations.
3. Changes being effected are all in the ADVERSE REACTIONS section and are underlined below to indicated what was added:

Ongoing Evaluation: The following serious adverse events of uncertain relationship to TAXOTERE® have been reported:

Body as a whole: abdominal pain, diffuse pain, chest pain

Cardiovascular: atrial fibrillation, deep vein thrombosis, ECG abnormalities, thrombophlebitis, pulmonary embolism, syncope, tachycardia, myocardial infarction

Digestive: constipation, duodenal ulcer, esophagitis, gastrointestinal hemorrhage, intestinal obstruction, ileus, gastrointestinal perforation, neutropenic enterocolitis

With the concurrence of the Medical Officer, these revisions are acceptable and the supplement should be approved.

NDA 20-449 /SLR-004
CSO labeling review, page 2

/S/

12/22/97

Ann M. Staten, Project Manager/ Date

/S/

Concurrence: _____ 12/31/97
Donna Griebel, M.D., Medical Officer/ Date

CC: Original NDA 20-449
HFD-150/Div File
/DGriebel
/AStaten

R/D initialed by D. Pease/12-19-97
F/T PGuinn for DPease/ *DP* 12/22/97

CSO Labeling Review