

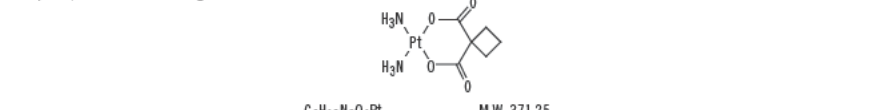
Package Insert

CARBOplatin Injection

WARNING
Carboplatin injection should be administered under the supervision of a qualified physician experienced in the use of cancer chemotherapeutic agents. Appropriate management of therapy and complications is possible only when adequate treatment facilities are readily available. Bone marrow suppression is dose related and may be severe, resulting in infection and/or bleeding. Anemia may be cumulative and may require transfusion support. Vomiting is another frequent drug related side effect.

Anaphylactic-like reactions to carboplatin have been reported and may occur within minutes of carboplatin injection administration. Epinephrine, corticosteroids, and antihistamines have been employed to alleviate symptoms.

DESCRIPTION
Carboplatin injection is supplied as a sterile, pyrogen-free, 10 mg/mL aqueous solution of carboplatin, USP. Carboplatin, USP is a platinum coordination compound. The chemical name for carboplatin, USP is platinum, diammine (1,1-cyclobutane)dicarbonyl(2-)-0,0',-(5P-4-2), and carboplatin, USP has the following structural formula:



Carboplatin, USP is a crystalline powder. It is soluble in water at a rate of approximately 14 mg/mL, and the pH of a 1% solution is 5 to 7. It is virtually insoluble in ethano, acetone, and dimethylacetamide.

CLINICAL PHARMACOLOGY
Carboplatin, like cisplatin, produces predominantly interstrand DNA cross-links rather than DNA-protein cross-links. This effect is apparently cell-cycle nonspecific. The aqation of carboplatin, which is thought to produce the active species, occurs at a slower rate than in the case of cisplatin. Despite this difference, it appears that both carboplatin and cisplatin induce equal numbers of drug-DNA cross-links, causing equivalent lesions and biological effects. The differences in potencies for carboplatin and cisplatin appear to be directly related to the difference in aqation rates.

In patients with creatinine clearances of about 60 mL/min or greater, plasma levels of intact carboplatin decay in a biphasic manner after a 30-minute intravenous infusion of 300 mg/m² to 500 mg/m² of carboplatin. The initial plasma half-life (alpha) was found to be 1.1 to 2 hours (n = 6), and the postdistribution plasma half-life (beta) was found to be 2.6 to 5.9 hours (n = 6). The total body clearance, apparent volume of distribution and mean residence time for carboplatin are 4.4 L/hour, 16.1 and 3.5 hours, respectively. The C_{max} values and areas under the plasma concentration versus time curves from 0 to infinity (AUC inf) increase linearly with dose, although the increase was slightly more than dose proportional. Carboplatin, therefore, exhibits linear pharmacokinetics over the dosing range studied (300 mg/m² to 500 mg/m²).

Carboplatin is not bound to plasma proteins. No significant quantities of protein-free, ultrafiltrable platinum-containing species other than carboplatin are present in plasma. However, platinum from carboplatin becomes irreversibly bound to plasma proteins and is slowly eliminated with a minimum half-life of 5 days.

The major route of elimination of carboplatin is renal excretion. Patients with creatinine clearances of approximately 60 mL/min or greater excrete 65% of the dose in the urine within 12 hours and 71% of the dose within 24 hours. All of the platinum in the 24-hour urine is present as carboplatin. Only 3% to 5% of the administered platinum is excreted in the urine between 24 and 96 hours. There are insufficient data to determine whether biliary excretion occurs.

In patients with creatinine clearances below 60 mL/min, the total body and renal clearances of carboplatin decrease as the creatinine clearance decreases. Carboplatin dosages should therefore be reduced in these patients (see **DOSE AND ADMINISTRATION**).

The primary determinant of carboplatin injection clearance is glomerular filtration rate (GFR) and this parameter of renal function is often decreased in elderly patients. Dosing formulas incorporating estimates of GFR (see **DOSE AND ADMINISTRATION**) to provide predictable carboplatin injection plasma AUCs should be used in elderly patients to minimize the risk of toxicity.

CLINICAL STUDIES
Use with Cyclophosphamide for Initial Treatment of Ovarian Cancer

In two prospectively randomized, controlled studies conducted by the National Cancer Institute of Canada, Clinical Trials Group (NCIC) and the Southwest Oncology Group (SWOG), 789 chemotherapy naïve patients with advanced ovarian cancer were treated with carboplatin or cisplatin, both in combination with cyclophosphamide every 28 days for 6 courses before surgical reevaluation. The following results were obtained from both studies:

Comparative Efficacy		SWOG	
Overview of Pivotal Trials			
	NCIC	SWOG	
Number of patients randomized	447	342	
Median age (years)	60	62	
Dose of cisplatin	75 mg/m ²	100 mg/m ²	
Dose of carboplatin	300 mg/m ²	300 mg/m ²	
Dose of cyclophosphamide	600 mg/m ²	600 mg/m ²	
Residual tumor < 2 cm (number of patients)	39% (174/447)	14% (49/342)	
Clinical Response in Measurable Disease Patients			
	NCIC	SWOG	
Carboplatin (number of patients)	60% (48/80)	58% (48/83)	
Cisplatin (number of patients)	58% (49/85)	43% (33/76)	
95% CI of difference	(-13.9%, 18.6%)	(-2.3%, 31.1%)	
Pathologic Complete Response*			
	NCIC	SWOG	
Carboplatin (number of patients)	11% (24/224)	10% (17/171)	
Cisplatin (number of patients)	15% (33/223)	10% (17/171)	
95% CI of difference	(-10.7%, 2.5%)	(-6.9%, 6.9%)	

* 114 Carboplatin and 109 Cisplatin patients did not undergo second look surgery in NCIC study.
90 Carboplatin and 106 Cisplatin patients did not undergo second look surgery in SWOG study.

Progression-Free Survival (PFS)		SWOG	
	NCIC	SWOG	
Median			
Carboplatin	59 weeks	49 weeks	
Cisplatin	61 weeks	47 weeks	
2-year PFS*			
Carboplatin	31%	21%	
Cisplatin	31%	21%	
95% CI of difference	(-9.3, 8.7)	(-9, 9.4)	
3-year PFS*			
Carboplatin	19%	8%	
Cisplatin	23%	14%	
95% CI of difference	(-11.5, 4.5)	(-14.1, 0.3)	
Hazard Ratio**	1.10	1.02	
95% CI	(0.89, 1.35)	(0.81, 1.29)	

* Kaplan-Meier Estimates
* Unrelated deaths occurring in the absence of progression were counted as events (progression) in this analysis.
** Analysis adjusted for factors found to be of prognostic significance were consistent with unadjusted analysis.

Survival		SWOG	
	NCIC	SWOG	
Median			
Carboplatin	110 weeks	86 weeks	
Cisplatin	99 weeks	79 weeks	
2-year Survival*			
Carboplatin	51.9%	40.2%	
Cisplatin	48.4%	39%	
95% CI of difference	(-6.2, 13.2)	(-9.8, 12.2)	
3-year Survival*			
Carboplatin	34.6%	18.3%	
Cisplatin	33.1%	24.9%	
95% CI of difference	(-7.7, 10.7)	(-15.9, 2.7)	
Hazard Ratio**	0.98	1.01	
95% CI	(0.78, 1.23)	(0.78, 1.30)	

* Kaplan-Meier Estimates
** Analysis adjusted for factors found to be of prognostic significance were consistent with unadjusted analysis.

Comparative Toxicity
The pattern of toxicity exerted by the carboplatin-containing regimen was significantly different from that of the cisplatin-containing combinations. Differences between the two studies may be explained by different cisplatin dosages and by different supportive care.

The carboplatin-containing regimen induced significantly more thrombocytopenia and, in one study, significantly more leukopenia and more need for transfusional support. The cisplatin-containing regimen produced significantly more anemia in one study. However, no significant differences occurred in incidences of infections and hemorrhagic episodes.

Non-hematologic toxicities (emesis, neurotoxicity, ototoxicity, renal toxicity, hypomagnesemia, and alopecia) were significantly more frequent in the cisplatin-containing arms.

ADVERSE EXPERIENCES IN PATIENTS WITH OVARIAN CANCER NCIC STUDY			
	Carboplatin Arm Percent*	Cisplatin Arm Percent*	P-Values**
Bone Marrow			
Thrombocytopenia	< 100,000/mm ³	70	29
	< 50,000/mm ³	41	6
	< 2,000 cells/mm ³	97	96
	< 1,000 cells/mm ³	81	79
	< 4,000 cells/mm ³	98	97
	< 2,000 cells/mm ³	68	52
	< 11 g/dL	91	91
	< 8 g/dL	18	12
		14	12
		10	4
		42	31
			0.018
Gastrointestinal			
Nausea and vomiting		93	98
		84	97
		50	62
			0.013
Neurologic			
Peripheral neuropathies		16	42
		13	33
		6	10
		28	40
			0.009
Renal			
Serum creatinine elevations		5	13
		17	31
			0.006
			< 0.001
Hepatic			
Bilirubin elevations		5	3
		17	13
		-	-
			-
Electrolytes loss			
Sodium		10	20
		16	22
		16	19
		63	88
			< 0.001
Other side effects			
Pain		36	37
		40	33
		15	19
		8	9
		12	9
		10	10
		50	62
		10	9
			ns

* Values are in percent of evaluable patients
** ns = not significant, p > 0.05
+ May have been affected by cyclophosphamide dosage delivered

ADVERSE EXPERIENCES IN PATIENTS WITH OVARIAN CANCER SWOG STUDY			
	Carboplatin Arm Percent*	Cisplatin Arm Percent*	P-Values**
Bone Marrow			
Thrombocytopenia	< 100,000/mm ³	59	35
	< 50,000/mm ³	22	11
	< 2,000 cells/mm ³	95	97
	< 1,000 cells/mm ³	84	78
	< 4,000 cells/mm ³	97	97
	< 2,000 cells/mm ³	76	67
	< 11 g/dL	88	87
	< 8 g/dL	8	24
		18	21
		6	4
		25	33
			ns
Gastrointestinal			
Nausea and vomiting		94	96
		82	91
		40	48
			0.007
Neurologic			
Peripheral neuropathies		13	28
		12	30
		4	6
		23	29
			ns
Renal			
Serum creatinine elevations		7	38
		-	-
			-
Hepatic			
Bilirubin elevations		5	3
		23	16
		29	20
			ns
Electrolytes loss			
Sodium		-	-
		-	-
		-	-
		-	-
		-	-
		58	77
			< 0.001
Other side effects			
Pain		54	52
		43	46
		23	30
		12	11
		10	11
		11	13
		43	57
		6	11
			ns

* Values are in percent of evaluable patients
** ns = not significant, p > 0.05
+ May have been affected by cyclophosphamide dosage delivered

Use as a Single Agent for Secondary Treatment of Advanced Ovarian Cancer
In two prospective, randomized controlled studies in patients with advanced ovarian cancer previously treated with chemotherapy, carboplatin achieved 6 clinical complete responses in 47 patients. The duration of these responses ranged from 45 to 71+ weeks.

INDICATIONS
Initial Treatment of Advanced Ovarian Carcinoma
Carboplatin injection is indicated for the initial treatment of advanced ovarian carcinoma in established combination with other approved chemotherapeutic agents. One established combination regimen consists of carboplatin and cyclophosphamide. Two randomized controlled studies conducted by the NCIC and SWOG with carboplatin versus cisplatin, both in combination with cyclophosphamide, have demonstrated equivalent overall survival between the two groups (see **CLINICAL STUDIES**).

There is limited statistical power to demonstrate equivalence in overall pathologic complete response rates and long-term survival (≥ 3 years) between the small number of patients with residual tumor < 2 cm after initial surgery also limits the statistical power to demonstrate equivalence in this subgroup.

Secondary Treatment of Advanced Ovarian Carcinoma
Carboplatin injection is indicated for the palliative treatment of patients with ovarian carcinoma recurrent after prior chemotherapy, including patients who have been previously treated with cisplatin.

Within the group of patients previously treated with cisplatin, those who have developed progressive disease while receiving cisplatin therapy may have a decreased response rate.

CONTRAINDICATIONS
Carboplatin injection is contraindicated in patients with a history of severe allergic reactions to cisplatin or platinum-containing compounds. Carboplatin injection should not be employed in patients with severe bone marrow depression or significant bleeding.

WARNINGS
Bone marrow suppression (leukopenia, neutropenia, and thrombocytopenia) is dose-dependent and is also the dose-limiting toxicity. Peripheral blood counts should be frequently monitored during carboplatin injection treatment and, when appropriate, until recovery is achieved. Median nadir occurs at day 21 in patients receiving single agent carboplatin. In general, single intermittent courses of carboplatin should not be repeated until leukocyte, neutrophil, and platelet counts have recovered.

Since anemia is cumulative, transfusions may be needed during treatment with carboplatin, particularly in patients receiving prolonged therapy.

Bone marrow suppression is increased in patients who have received prior therapy, especially regimens including cisplatin. Marrow suppression is also increased in patients with impaired kidney function. Initial carboplatin injection dosages in these patients should be appropriately reduced (see **DOSE AND ADMINISTRATION**) and blood counts should be carefully monitored between courses. The use of carboplatin in combination with other bone marrow suppressing therapies must be carefully managed with respect to dosage and timing in order to minimize additive effects.

Carboplatin has limited nephrotic potential, but concomitant treatment with aminoglycosides has resulted in increased renal and/or audologic toxicity, and caution must be exercised when a patient receives both drugs. Clinically significant hearing loss has been reported to occur in pediatric patients when carboplatin was administered at a higher than recommended doses in combination with other ototoxic agents.

Carboplatin can induce emesis, which can be more severe in patients previously receiving emetogenic therapy. The incidence and intensity of emesis have been reduced by using premedication with antiemetics. Although no conclusive efficacy data exist with the following schedules of carboplatin, lengthening the duration of single intravenous administration to 24 hours or dividing the total dose over five consecutive daily pulse doses has resulted in reduced emesis.

Although peripheral neurotoxicity is infrequent, its incidence is increased in patients older than 65 years and in patients previously treated with cisplatin. Pre-existing cisplatin-induced neurotoxicity does not worsen in about 70% of the patients receiving carboplatin as secondary treatment. Loss of vision, which can be complete for light and colors, has been reported after the use of carboplatin with doses higher than those recommended in the package insert. Vision appears to recover totally or to a significant extent within weeks of stopping these high doses.

As in the case of other platinum-coordination compounds, allergic reactions to carboplatin have been reported. These may occur within minutes of administration and should be managed with appropriate supportive therapy. There is increased risk of allergic reactions including anaphylaxis in patients previously exposed to platinum therapy (see **CONTRAINDICATIONS AND ADVERSE REACTIONS, Allergic Reactions**).

High dosages of carboplatin (more than 4 times the recommended dose) have resulted in severe abnormalities of liver function tests.

Carboplatin injection may cause fetal harm when administered to a pregnant woman. Carboplatin has been shown to be embryotoxic and teratogenic in rats. There are no adequate and well-controlled studies in pregnant women. If this drug is used during pregnancy, or if the patient becomes pregnant while receiving this drug, the patient should be apprised of the potential hazard to the fetus. Women of childbearing potential should be advised to avoid becoming pregnant.

PRECAUTIONS
General
Needs or intravenous administration sets containing aluminum parts that may come in contact with carboplatin injection should not be used for the preparation or administration of the drug. Aluminum can react with carboplatin causing precipitate formation and loss of potency.

Drug Interactions
The renal effects of nephrotoxic compounds may be potentiated by carboplatin.

Carcinogenesis, Mutagenesis, Impairment of Fertility
The carcinogenic potential of carboplatin has not been studied, but compounds with similar mechanisms of action and mutagenicity profiles have been reported to be carcinogenic. Carboplatin has been shown to be mutagenic both *in vitro* and *in vivo*. It has also been shown to be embryotoxic and teratogenic in rats receiving the drug during organogenesis. Secondary malignancies have been reported in association with multi-drug therapy.

Pregnancy
Pregnancy Category D
See **WARNINGS**.

Nursing Mothers
It is not known whether carboplatin is excreted in human milk. Because there is a possibility of toxicity in nursing infants secondary to carboplatin treatment of the mother, it is recommended that breastfeeding be discontinued if the mother is treated with carboplatin injection.

Pediatric Use
Safety and effectiveness in pediatric patients have not been established (see **WARNINGS**, "audiologic toxicity").

Geriatric Use
Of the 789 patients in initial treatment combination therapy studies (NCIC and SWOG), 395 patients were treated with carboplatin in combination with cyclophosphamide. Of these, 141 were over 65 years of age and 22 were 75 years or older. In these trials, age was not a prognostic factor for survival. In terms of safety, elderly patients treated with carboplatin were more likely to develop severe thrombocytopenia than younger patients. In a combined database of 1,942 patients (414 were ≥ 65 years of age) that received single agent carboplatin for different tumor types, a similar incidence of adverse events was seen in patients 65 years and older and in patients less than 65. Other reported clinical experience has not identified differences in response between elderly and younger patients, but greater sensitivity of some older individuals cannot be ruled out. Because renal function is often decreased in the elderly, renal function should be considered in the selection of carboplatin injection dosage (see **DOSE AND ADMINISTRATION**).

ADVERSE REACTIONS
For a comparison of toxicities when carboplatin or cisplatin was given in combination with cyclophosphamide, see **CLINICAL STUDIES**. Use with Cyclophosphamide for Initial Treatment of Ovarian Cancer, Comparative Toxicity.

ADVERSE EXPERIENCES IN PATIENTS WITH OVARIAN CANCER			
	First Line Combination Therapy* Percent	Second Line Single Agent Therapy** Percent	
Bone Marrow			
Thrombocytopenia	< 100,000/mm ³	66	62
	< 50,000/mm ³	33	35
	< 2,000 cells/mm ³	96	67
	< 1,000 cells/mm ³	82	21
	< 4,000 cells/mm ³	97	85
	< 2,000 cells/mm ³	71	26
	< 11 g/dL	90	90
	< 8g/dL	14	21
		16	5
		8	5
		35	44
Gastrointestinal			
Nausea and vomiting		93	92
		83	81
		46	21
Neurologic			
Peripheral neuropathies		15	6
		12	1
		5	1
		26	5
Renal			
Serum creatinine elevations		6	10
		17	22
Hepatic			
Bilirubin elevations		5	5
		20	19
		29	37
Electrolytes loss			

STORAGE

Unopened vials of carboplatin injection are stable to the date indicated on the package when stored at 20° to 25°C (68° to 77°F) [See USP Controlled Room Temperature].

PROTECT FROM LIGHT.

Carboplatin injection multidose vials maintain microbial, chemical, and physical stability for up to 14 days at 25°C following multiple needle entries. Parenteral drug products should be inspected visually for particulate matter and discoloration prior to administration. Solutions for infusion should be discarded 8 hours after preparation.

HANDLING AND DISPOSAL

Caution should be exercised in handling and preparing carboplatin injection. Several guidelines on this subject have been published.¹⁻⁴

To minimize the risk of dermal exposure, always wear impervious gloves when handling vials containing carboplatin injection. If carboplatin injection contacts the skin, immediately wash the skin thoroughly with soap and water. If carboplatin injection contacts mucous membranes, the membranes should be flushed immediately and thoroughly with water. More information is available in the references listed below.

REFERENCES

1. NIOSH Alert: Preventing occupational exposures to antineoplastic and other hazardous drugs in healthcare settings. 2004. U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2004-165.
2. OSHA Technical Manual, TED 1-0.15A, Section VI: Chapter 2. Controlling occupational exposure to hazardous drugs. OSHA, 1999. http://www.osha.gov/dts/osta/otm/otm_vi/otm_vi_2.html
3. American Society of Health-System Pharmacists. ASHP guidelines on handling hazardous drugs. *Am J Health-Syst Pharm.* 2006;63:1172-1193.
4. Polovich M, White JM, Kelleher LO, eds. 2005. Chemotherapy and bioterapy guidelines and recommendations for practice. 2nd ed. Pittsburgh, PA: Oncology Nursing Society.

Rev. A 10/2011

Teva Parenteral Medicines, Inc.
Irvine, CA 92618

Patient Information
CARBOplatin
(kar boe pla tin)
Injection

R only

Read this entire leaflet carefully. Keep it for future reference.

This information will help you learn more about carboplatin. It cannot, however, cover all the possible warnings or side effects relating to carboplatin, and it does not list all of the benefits and risks of carboplatin. Your doctor should always be your first choice for detailed information about your medical condition and your treatment. Be sure to ask your doctor about any questions you may have.

What is cancer?

Under normal conditions, the cells in your body divide and grow in an orderly, controlled fashion. Cell division and growth are necessary for the human body to perform its functions and to repair itself. Cancer cells are different from normal cells because they are not able to control their own growth. The reasons for this abnormal growth are not yet fully understood.

A tumor is a mass of unhealthy cells that are dividing and growing fast and in an uncontrolled way. When a tumor invades surrounding healthy body tissue it is known as a malignant tumor. A malignant tumor can spread (metastasize) from its original location to other parts of the body.

What is carboplatin?

Carboplatin is a medicine that is used to treat cancer of the ovaries. It acts by interfering with the division of rapidly multiplying cells, particularly cancer cells.

Who should not take carboplatin?

Treatment with carboplatin is not recommended if you:

- are allergic to carboplatin or other platinum-containing products;
- have a weakened blood-forming system (bone marrow depression) or significant bleeding;
- are pregnant, intend to become pregnant, or are breastfeeding a baby.

How is carboplatin used?

Only a professional experienced in the use of cancer drugs should give you this medication. Carboplatin is given by dripping the medicine slowly and directly into a vein (intravenous infusion) for 15 minutes or longer. Your doctor will determine the dose of carboplatin for you based on your weight, height, and kidney function. Carboplatin may be given alone or with other drugs. Treatment is usually repeated every four weeks for a number of cycles.

Before and after carboplatin treatment, your doctor may give you medication to lessen the nausea and vomiting associated with this cancer treatment

What should you tell your doctor before starting treatment with carboplatin?

Discuss the benefits and risks of carboplatin with your doctor before beginning treatment.

Be sure to inform your doctor:

- If you are allergic to carboplatin or other platinum-containing products;
- If you are or intend to become pregnant, since carboplatin may harm the developing fetus. It is important to use effective birth control while you are being treated with carboplatin.
- If you are breastfeeding, since nursing infants may be exposed to carboplatin in this way;
- If you are taking other medicines, including all prescription and non-prescription (over-the-counter) drugs, since carboplatin may affect the action of other medicines;
- If you have any other medical problems, especially chicken pox (including recent exposure to adults or children with chicken pox), shingles, hearing problems, infection, or kidney disease, since treatment with carboplatin increases the risk and severity of these conditions.

What should I avoid while taking carboplatin?

If you are pregnant or think you might be pregnant, or if you are breastfeeding, let your doctor know right away. Carboplatin may harm your developing fetus or breastfeeding baby. If you are a woman of childbearing age, you should use birth control to avoid getting pregnant while you are taking carboplatin.

You should avoid contact with adults and children who have infections, and tell your doctor right away if you show signs of infection such as cough, fever, and/or chills. Also, while you are being treated with carboplatin or after you stop treatment, first check with your doctor **before** getting any immunizations (vaccinations). Avoid contact with adults or children who have received oral polio vaccine since they can pass the polio virus to you.

What are the possible side effects of carboplatin?

Carboplatin may cause unwanted effects, particularly because carboplatin interferes with the growth of normal cells as well as cancer cells. For example, the occurrence of another cancer (secondary malignancy) has been reported in patients receiving cancer chemotherapy with multiple drugs. It is not always possible to tell whether such effects are caused by carboplatin, another drug you may be taking, or your illness. Because some of these effects may be serious, you will need close medical supervision during treatment with carboplatin.

The most serious side effects of carboplatin are:

- **bleeding and reduced blood cells, including reduced red blood cells (anemia) and platelets (needed for proper blood clotting)**, which may be severe enough to require blood transfusion. You should tell your doctor right away if you notice any unusual bruising or bleeding, including black tarry stools or blood in the urine.
- **infection** – carboplatin can temporarily lower the number of white blood cells in your blood, increasing the risk of infection;
- **life-threatening allergic reaction** – during and after treatment the doctor or nurse will observe you carefully for signs of allergic reaction;
- **kidney and liver problems;**
- **loss of hearing or ringing in the ears;**

Contact your doctor right away if you experience any of these effects, or notice effects that worry you or are troublesome.

Of the less serious side effects associated with carboplatin treatment, the most common are nausea, vomiting, diarrhea, loss of appetite, hair loss and numbness, tingling, burning, or pain in the hands and feet.

This medicine was prescribed for your particular condition. It must be given under close medical supervision by a doctor trained in the use of drugs for the treatment of cancer.

This summary does not include everything there is to know about carboplatin. Medicines are sometimes prescribed for purposes other than those listed in patient leaflets. If you have questions or concerns, or want more information about carboplatin, your physician and pharmacist have the complete prescribing information upon which this information is based. You may want to read it and discuss it with your doctor. Remember, no written summary can replace careful discussion with your doctor.

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- If you are taking other medicines, including all prescription and non-prescription (over-the-counter) drugs, since carboplatin may affect the action of other medicines;
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Carboplatin may cause unwanted effects, particularly because carboplatin interferes with the growth of normal cells as well as cancer cells. For example, the occurrence of another cancer (secondary malignancy) has been reported in patients receiving cancer chemotherapy with multiple drugs. It is not always possible to tell whether such effects are caused by carboplatin, another drug you may be taking, or your illness. Because some of these effects may be serious, you will need close medical supervision during treatment with carboplatin.

The most serious side effects of carboplatin are:

- **bleeding and reduced blood cells, including reduced red blood cells (anemia) and platelets (needed for proper blood clotting)**, which may be severe enough to require blood transfusion. You should tell your doctor right away if you notice any unusual bruising or bleeding, including black tarry stools or blood in the urine.
- **infection** – carboplatin can temporarily lower the number of white blood cells in your blood, increasing the risk of infection;
- **life-threatening allergic reaction** – during and after treatment the doctor or nurse will observe you carefully for signs of allergic reaction;
- **kidney and liver problems;**
- **loss of hearing or ringing in the ears;**

Contact your doctor right away if you experience any of these effects, or notice effects that worry you or are troublesome.

Of the less serious side effects associated with carboplatin treatment, the most common are nausea, vomiting, diarrhea, loss of appetite, hair loss and numbness, tingling, burning, or pain in the hands and feet.

This medicine was prescribed for your particular condition. It must be given under close medical supervision by a doctor trained in the use of drugs for the treatment of cancer.

This summary does not include everything there is to know about carboplatin. Medicines are sometimes prescribed for purposes other than those listed in patient leaflets. If you have questions or concerns, or want more information about carboplatin, your physician and pharmacist have the complete prescribing information upon which this information is based. You may want to read it and discuss it with your doctor. Remember, no written summary can replace careful discussion with your doctor.

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/s/

JOHN F GRACE
03/14/2012
for Wm Peter Rickman