

# Carboso<sup>l</sup> 450mg/45ml Injection

(Carboplatin)

کاربوسول  
(کاربوپلاتین)  
۳۵۰ ملی گرام / ۴۵ ملی لیٹر  
انجکشن

**COMPOSITION:****Carboso<sup>l</sup> Injection 450mg/45ml**

Each 45ml vial contains:

Carboplatin.....450mg

**(BP Specifications)****DESCRIPTION:**

Carboplatin Injection is supplied as a sterile, pyrogen-free, 10 mg/ml aqueous solution of carboplatin. Carboplatin is a second-generation platinum analog. It is a chemotherapy medication used to treat a number of forms of cancers. Carboplatin is a structural analog of cisplatin in which the chloride groups of the parent compound are replaced by a carboxycyclobutane moiety. It shares a similar spectrum of clinical activity with cisplatin and cross resistance is common.

**MECHANISM OF ACTION:**

Carboplatin is a chemotherapeutic drug belongs to cell cycle nonspecific (CCNS) platinum analogs. Although the precise mechanism of action of the platinum analogs is unclear, they are thought to exert their cytotoxic effects in the same manner as alkylating agents. As such, they kill tumor cells in all stages of the cell cycle and bind DNA through the formation of intrastrand and interstrand cross-links, thereby leading to inhibition of DNA synthesis and function. The primary binding site is the N7 position of guanine, but covalent interaction with the N3 position of adenine and O6 position of cytosine can also occur. In addition to targeting DNA, the platinum analogs have been shown to bind to both cytoplasmic and nuclear proteins, which may also contribute to their cytotoxic and antitumor effects. The platinum complexes appear to synergize with certain other anticancer drugs, including alkylating agents, fluoropyrimidines, and taxanes.

**INDICATIONS:****Carboplatin is indicated for the treatment of:**

- Advanced ovarian carcinoma of epithelial origin in:
  - First line therapy
  - Second line therapy, after other treatments have failed.
- Small cell carcinoma of the lung.
- Non-Small cell carcinoma of the lung.
- Breast cancer, bladder cancer, head and neck cancer.

**DOSAGE AND ADMINISTRATION:**

**NOTE: Aluminum reacts with carboplatin causing precipitate formation and loss of potency, therefore, needles or intravenous sets containing aluminum parts that may come in contact with the drug must not be used for the preparation or administration of Carboplatin.**

Carboplatin should be used by the intravenous route only. The recommended dosage of Carboplatin in previously untreated adult patients with normal kidney function, i.e. creatinine clearance > 60 ml/min is 400 mg/m<sup>2</sup> as a single short term IV dose administered by a 15 to 60 minutes infusion. Alternatively, the Calvert formula shown below may be used to determine dosage:

Dose (mg) = target AUC (mg/ml x min) x [GFR ml/min + 25]		
Target AUC	Planned chemotherapy	Patient treatment status
5-7mg/ml .min	single agent Carboplatin	Previously untreated
4-6 mg/ml .min	single agent Carboplatin	Previously treated
4-6mg/ml .min	Carboplatin + cyclophosphamide	Previously untreated

Note: With the Calvert formula, the total dose of Carboplatin is calculated in mg, not mg/m<sup>2</sup>.

Therapy should not be repeated until four weeks after the previous Carboplatin course and/or until the neutrophil count is at least 2,000 cells/mm<sup>3</sup> and the platelet count is at least 100,000 cells/mm<sup>3</sup>.

Initial dosage should be reduced by 20-25% in patients with risk factors such as previous myelosuppressive therapy and/or poor performance status. Determination of hematologic nadir by weekly blood counts during initial courses is recommended for future dosage adjustment and scheduling of carboplatin. The safety measures for dangerous substances are to be

complied with preparation and administration. Preparation must be carried out by personnel who have been trained in the safe use while wearing protective gloves, face mask and protective clothes.

**Impaired renal function**

In patients with impaired renal function, dosage of carboplatin should be reduced (refer to Calvert formula) and hematological nadirs and renal function monitored. Patients with creatinine clearance below 60 ml/min are at increased risk of severe myelosuppression. The frequency of severe leukopenia, neutropenia, or thrombocytopenia has been maintained at about 25% with the following dosage recommendations:

Baseline Creatinine Clearance	Initial Dose (Day 1)
41-59 ml/min	250 mg/m <sup>2</sup> IV
16-40 ml/min	200 mg/m <sup>2</sup> IV

Insufficient data exist on the use of carboplatin injection in patients with creatinine of 15 ml/min or less to permit a recommendation for treatment.

All of the above dosing recommendations apply to the initial course of treatment. Subsequent dosages should be adjusted according to the patient's tolerance and to the acceptable level of myelosuppression.

**Combination Therapy**

The optimal use of Carboplatin in combination with other myelosuppressive agents requires dosage adjustments according to the regimen and schedule to be adopted.

In the chemotherapy of advanced ovarian cancer, an effective combination for previously untreated patients consists of, Carboplatin: 300 mg/m<sup>2</sup> IV on day 1 every 4 weeks for 6 cycles. Cyclophosphamide: 600 mg/m<sup>2</sup> IV on day 1 every 4 weeks for 6 cycles.

For directions regarding the use and administration of cyclophosphamide please refer to its package insert.

**Dose Adjustment Recommendations**

Pretreatment platelet count and performance status are important prognostic factors for severity of myelosuppression in previously treated patients. The suggested dose adjustments for single agent or combination therapy shown in the table below are modified from controlled trials in previously treated and untreated patients with ovarian carcinoma. Blood counts were done weekly, and the recommendations are based on the lowest post-treatment platelet or neutrophil value.

Platelets	Neutrophils	Adjusted Dose* (From Prior Course)
>100,000	>2,000	125%
50-100,000	500-2,000	No Adjustment
<50,000	<500	75%

\* Percentages apply to Carboplatin injection as a single agent or to both Carboplatin and cyclophosphamide in combination. In the controlled studies, dosages were also adjusted at a lower level (50% to 60%) for severe myelosuppression. Escalations above 125% were not recommended for these studies.

Carboplatin is usually administered by an infusion lasting 15 minutes or longer. No pre- or post-treatment hydration or forced diuresis is required.

**Elderly**

In patients of more than 65 years of age, adjustment of the carboplatin dose to the general condition is necessary during the first and the subsequent therapeutic courses.

**Pediatric population**

There is insufficient information to support a dosage recommendation in the pediatric population.

**Preparation of Intravenous Solutions**

Carbosal injection is a premixed aqueous solution of 10 mg/mL carboplatin. Carboplatin aqueous solution can be further diluted to concentrations as low as 0.5 mg/mL with 5% Dextrose in Water (D5W) or 0.9% Sodium Chloride Injection, USP. When prepared as directed, Carboplatin aqueous solutions are stable for 8 hours at room temperature (25°C). Since no antibacterial preservative is contained in the formulation, it is recommended that Carboplatin aqueous solutions be discarded 8 hours after dilution.

**PHARMACOKINETICS:****Absorption**

After a 1-hour infusion (20-520mg/m<sup>2</sup>), plasma levels of total platinum and free (ultra-filterable) platinum decay biphasically following first order kinetics. For free platinum, the initial phase (t<sub>α</sub>) half-life is approximately 90 minutes and the later phase (t<sub>β</sub>) half-life approximately 6 hours. All free platinum is in the form of carboplatin in the first 4 hours after administration.

**Distribution**

Protein binding of carboplatin reaches 85-89% within 24 hours of administration, although during the first 4 hours, only up to 29% of the dose is protein bound. Patients with poor renal function may require dosage adjustments due to altered pharmacokinetics of carboplatin.

**Elimination**

Carboplatin is excreted primarily by glomerular filtration in urine, with recovery of 65% of a dose within 24 hours. Most of the drug is excreted within the first 6 hours. Approximately 32% of a given dose of carboplatin is excreted unchanged. Carboplatin clearance has been reported to vary by 3- to 4-fold in pediatric patients. As for adult patients, literature data suggest that renal function may contribute to the variation in carboplatin clearance.

**WARNINGS:****Myelosuppression**

Myelosuppression as a result of carboplatin treatment is closely related to the renal clearance of the drug. Therefore, in patients with abnormal renal function, or who are receiving concomitant therapy with nephrotoxic drugs, myelosuppression, especially thrombocytopenia, may be more severe and prolonged.

The occurrence, severity and protraction of toxicity is likely to be greater in patients who have received extensive prior treatment with the drug for their disease or with cisplatin, have poor performance status and are advanced in years. Renal function parameters should be assessed prior to, during and after carboplatin therapy. Initial carboplatin dosages in these groups of patients should be appropriately reduced and the effects carefully monitored through frequent blood counts between courses. Myelosuppressive effects may be additive to those of concomitant chemotherapy. Peripheral blood counts (including platelets, white blood cells and haemoglobin) should be followed during and after therapy. Combination therapy with other myelosuppressive drugs may require modification of dosage/timing of schedules in order to minimize additive effects. Carboplatin courses should not, in general, be repeated more frequently than every 4 weeks in order to ensure that the nadir in blood counts has occurred and there has been recovery to a satisfactory level.

Patients with severe and persistent myelosuppression are at high risk of infectious complications including fatal outcomes. If any of these events occurs, carboplatin should be interrupted and dose modification or discontinuation should be considered.

**Allergic reactions**

As with other platinum-based drugs, allergic reactions appearing most often during administration may occur and necessitate discontinuation of infusion. Patients should be observed carefully and an appropriate symptomatic treatment (including antihistamines, adrenaline and/or glucocorticoids) must also be initiated in such cases. Cross reactions, sometimes fatal, have been reported with all the platinum compounds. The vial stopper contains dry natural rubber (a derivative of latex), which may cause allergic reactions.

**Renal Toxicity**

In patients with impaired renal function, the effect of carboplatin on the haematopoietic system is more pronounced and longer-

acting than in patients with normal renal function. In this risk group, therapy with carboplatin must be performed with special caution.

**PRECAUTIONS:**

Carboplatin should only be administered under the supervision of a qualified physician who is experienced in the use of chemotherapeutic agents. Diagnostic and treatment facilities should be readily available for management of therapy and possible complications.

Peripheral blood counts, renal and hepatic function tests should be monitored closely. Blood counts should be performed prior to commencement of carboplatin therapy and at weekly intervals thereafter. The drug should be discontinued if abnormal depression of the bone marrow or abnormal renal or hepatic function is seen.

**Hematologic Toxicity**

Leukopenia, neutropenia, and thrombocytopenia are dose-dependent and dose-limiting. Peripheral blood counts should be monitored during carboplatin treatment. This will monitor toxicity and help determine the nadir and recovery of hematological parameters and assist in subsequent dosage adjustments. Median day of nadir is day 21 in patients receiving single agent carboplatin and day 15 in patients receiving carboplatin in combination with other chemotherapeutic agents. In general, single intermittent courses of carboplatin should not be repeated until leukocyte, neutrophil, and platelet counts have returned to normal. Lowest levels of platelets are generally seen between days 14 and 21 of initial therapy. A greater reduction is seen in patients who previously received extensive myelosuppressive chemotherapy. Lowest levels of white cells occur generally between days 14 and 28 of initial therapy. If neutrophil levels fall below 2000 cells/mm<sup>3</sup> or platelets are less than 100,000 cells/mm<sup>3</sup> then postponement of carboplatin therapy until bone marrow recovery is evident, should be considered. This recovery usually takes 5 to 6 weeks. Transfusions may be necessary and dosage reductions recommended for subsequent treatment.

Anemia is frequent and cumulative, however rarely requires a transfusion.

**Hemolytic-uraemic syndrome (HUS)**

Hemolytic-uraemic syndrome (HUS) is a life-threatening side effect. Carboplatin should be discontinued at the first signs of any evidence of microangiopathic hemolytic anemia, such as rapidly falling haemoglobin with concomitant thrombocytopenia, elevation of serum bilirubin, serum creatinine, blood urea nitrogen, or LDH. Renal failure may not be reversible with discontinuation of therapy and dialysis may be required. Hemolytic anemia with the presence of serologic drug-induced antibodies has been reported in patients treated with carboplatin. This event can be fatal. Acute promyelocytic leukemia and myelodysplastic syndrome (MDS)/acute myeloid leukemia (AML) have been reported years after therapy with carboplatin and other antineoplastic treatments.

**Venocclusive liver disease**

Cases of hepatic venocclusive disease (sinusoidal obstruction syndrome) have been reported, some of which were fatal. Patients should be monitored for signs and symptoms of abnormal liver function or portal hypertension which do not obviously result from liver metastases.

**Tumour lysis syndrome (TLS)**

In post marketing experience tumour lysis syndrome (TLS) has been reported in patients following the use of carboplatin alone or in combination with other chemotherapeutic agents. Patient at high risk of TLS, such as patients with high proliferative rate, high tumor burden, and high sensitivity to cytotoxic agents, should be monitored closely and appropriate precaution taken.

**Renal toxicity**

The incidence and severity of nephrotoxicity may increase in patients who have impaired kidney function before carboplatin treatment. It is not clear whether an appropriate hydration programme might overcome such an effect but dosage reduction or discontinuation of therapy is required in the presence of severe alteration in renal function test. Impairment of renal function is more likely in patients who have previously experienced nephrotoxicity as a result of Cisplatin therapy.

**Neurologic Toxicity**

Although peripheral neurologic toxicity is generally common and mild, limited to paresthesia and decreases in

osteotendinous reflexes, its frequency is increased in patients older than 65 years and/or in patients previously treated with cisplatin. Monitoring and neurological examinations should be carried out at regular intervals. Visual disturbances, including loss of vision, have been reported after the use of carboplatin in doses higher than those recommended in patients with renal impairment. Vision appears to recover totally or to a significant extent within weeks of stopping these high doses.

#### **Reversible Posterior Leukoencephalopathy Syndrome (RPLS)**

Cases of Reversible Posterior Leukoencephalopathy Syndrome (RPLS) have been reported in patients receiving carboplatin in combination chemotherapy. RPLS is a rare, reversible (after treatment discontinuation), rapidly evolving neurological condition, which can include seizure, hypertension, headache, confusion, blindness, and other visual and neurological disturbances. Diagnosis of RPLS is based upon confirmation by brain imaging, preferably MRI (Magnetic Resonance Imaging)

#### **Geriatric Use**

In studies involving combination therapy with carboplatin and cyclophosphamide, elderly patients treated with carboplatin were more likely to develop severe thrombocytopenia than younger patients. Because renal function is often decreased in the elderly, renal function should be considered when determining dosage.

#### **Other**

Auditory defects have been reported during carboplatin therapy. Ototoxicity may be more pronounced in children and is more likely seen in patients previously treated with cisplatin. Cases of hearing loss with a delayed onset have been reported in pediatric patients. A long-term audiometric follow-up in this population is recommended.

Administration of live or live-attenuated vaccines in patients immunocompromised by chemotherapeutic agents including carboplatin may result in serious or fatal infections. Vaccination with a live vaccine should be avoided in patients receiving carboplatin. Killed or inactivated vaccines may be administered; however, the response to such vaccines may be diminished.

Aluminium containing equipment should not be used during preparation and administration of Carboplatin.

#### **Special precautions for disposal and handling**

Parenteral drugs should be inspected visually for particulate matter and discoloration prior to administration, whenever solution and container permit. If particular matter is observed, shake and re-inspect. Vials with visible particulate matter should not be used.

#### **FERTILITY, PREGNANCY AND LACTATION**

##### **Pregnancy**

Carboplatin can cause foetal harm when administered to a pregnant woman. Carboplatin has been shown to be embryotoxic and teratogenic in rats receiving the drug during organogenesis. No controlled studies in pregnant women have been conducted. Safe use of carboplatin in pregnancy has not been established. Both men and women receiving carboplatin should be informed of the potential risk of adverse effects on reproduction. Women of childbearing potential should be advised to avoid becoming pregnant by using effective contraception and should be fully informed of the potential hazard to the foetus should they become pregnant during carboplatin therapy. Carboplatin should not be used in pregnant women or women of childbearing potential who might become pregnant unless the potential benefits to the mother outweigh the possible risks to the foetus.

##### **Breast-feeding**

It is not known whether Carboplatin is excreted in breast milk. To avoid possible harmful effects in the infant, breast-feeding must be stopped during carboplatin therapy.

##### **Fertility**

Gonadal suppression resulting in amenorrhoea or azospermia may occur in patients receiving antineoplastic therapy. These effects appear to be related to dose and length of therapy and may be irreversible. Prediction of the degree of testicular or ovarian functional impairment is complicated by the common use of combinations of several antineoplastics, which makes it difficult to assess the effects of individual agents. Men of sexually mature age treated with carboplatin are advised not to

father a child during treatment and up to 6 months afterwards. Male patients should seek advice about sperm preservation prior to initiation of the therapy because of the possibility of irreversible infertility due to therapy with carboplatin.

#### **SIDE EFFECTS:**

##### **Blood and lymphatic system disorders:**

Myelosuppression is the dose-limiting toxicity of carboplatin injection. In patients with normal baseline values, thrombocytopenia with platelet counts below 50,000/mm<sup>3</sup> occurs in 25% of patients, neutropenia with granulocyte counts below 1,000/mm<sup>3</sup> in 18% of patients, and leukopenia with WBC counts below 2,000/mm<sup>3</sup> in 14% of patients. The nadir usually occurs on day 21. Myelosuppression can be worsened by combination of carboplatin injection with other myelosuppressive compounds or forms of treatment. Myelotoxicity is more severe in previously treated patients, in particular in patients previously treated with cisplatin and in patients with impaired kidney function. Patients with poor performance status have also experienced increased leukopenia and thrombocytopenia. These effects, although usually reversible, have resulted in infectious and hemorrhagic complications in 4% and 5% of patients given carboplatin injection, respectively. These complications have led to death in less than 1% of patients. Anemia with haemoglobin values below 8 g/dl has been observed in 15% of patients with normal baseline values. The incidence of anemia is increased with increasing exposure to carboplatin injection.

##### **Neoplasms, benign, malignant and unspecified (including cysts and polyps):**

Secondary acute malignancies after cytostatic combination therapies containing carboplatin have been reported.

##### **Respiratory, thoracic and mediastinal disorders:**

Pulmonary fibrosis has been reported very rarely, manifested by tightness of the chest and dyspnea. This should be considered if a pulmonary hypersensitivity state is excluded.

##### **Gastrointestinal disorders:**

Vomiting occurs in 65% of patients, in one-third of whom it is severe. Nausea occurs in an additional 15%. Previously treated patients (in particular patients previously treated with cisplatin) appear to be more prone to vomiting. Nausea and vomiting are generally delayed until 6 to 12 hours after administration of carboplatin, are readily controlled or prevented with anti-emetics and disappear within 24 hours. Vomiting is more likely when carboplatin injection is given in combination with other emetogenic compounds.

The other gastrointestinal complaints corresponded to pain in 8% of patients, diarrhea, and constipation in 6% of patients. Cramps have also been reported.

##### **Nervous system disorders:**

Peripheral neuropathy (mainly paresthesias and decrease of osteotendinous reflexes) has occurred in 4% of patients administered carboplatin injection. Patients older than 65 years and patients previously treated with cisplatin, as well as those receiving prolonged treatment with carboplatin injection, appear to be at increased risk. Clinically significant-sensory disturbances (i.e. visual disturbances and taste modifications) have occurred in 1% of patients.

The overall frequency of neurologic side effects seems to be increased in patients receiving carboplatin injection in combination. This may also be related to longer cumulative exposure. Paresthesias present prior to treatment, especially if caused by cisplatin, may persist or worsen during carboplatin therapy.

##### **Eye disorders:**

Visual disturbances, including sight loss, are usually associated with high dose therapy in renal impaired patients.

##### **Ear and labyrinth disorders:**

A subclinical decrease in hearing acuity in the high frequency range (4000-8000 Hz), determined by audiogram, occurred in 15% of patients. Very rare cases of hypoacusia have been reported. Tinnitus was also commonly reported. Hearing loss as a result of cisplatin therapy may give rise to persistent or worsening symptoms. At higher than recommended doses, in common with other ototoxic agents, clinically significant hearing loss has been reported to occur in pediatric patients when carboplatin is administered.

##### **Hepatobiliary disorders:**

Modification of liver function in patients with normal baseline

values was observed, including elevation of total bilirubin in 5%, SGOT in 15%, and alkaline phosphatase in 24% of patients. These modifications were generally mild and reversible in about one-half the patients. In a limited series of patients receiving very high dosages of carboplatin injection and autologous bone marrow transplantation, severe elevation of liver function tests has occurred.

Cases of an acute, fulminant liver cell necrosis occurred after high-dose administration of carboplatin.

#### Renal and urinary disorders:

When given in usual doses, development of abnormal renal function has been uncommon, despite the fact that carboplatin injection has been administered without high-volume fluid hydration and/or forced diuresis. Elevation of serum creatinine occurs in 6% of patients, elevation of blood urea nitrogen in 14%, and of uric acid in 5% of patients. These are usually mild and are reversible in about one-half the patients. Creatinine clearance has proven to be the most sensitive renal function measure in patients receiving carboplatin injection. Twenty-seven percent (27%) of patients who have a baseline value of 60 mL/min or greater, experience a reduction in creatinine clearance during carboplatin injection therapy. Impairment of renal function is more likely in patients who have previously experienced nephrotoxicity as a result of cisplatin therapy.

#### Immune system disorders:

Anaphylactic-type reactions, sometimes fatal, may occur in the minutes following injection of the product: facial edema, dyspnea, tachycardia, low blood pressure, urticaria, anaphylactic shock, bronchospasm. Fever with no apparent cause has also been reported.

#### Skin and subcutaneous tissue disorders:

Erythematous rash, fever and pruritis have been observed. These were reactions similar to those seen after cisplatin therapy but in a few cases no cross-reactivity was present.

#### Investigations:

Decreases in serum sodium, potassium, calcium, and magnesium occur in 29%, 20%, 22%, and 29% of patients, respectively. In particular, cases of early hyponatremia have been reported. The electrolyte losses are minor and mostly take a course without any clinical symptoms.

#### Cardiac disorders:

Isolated cases of cardiovascular incidents (cardiac insufficiency, embolism) as well as isolated cases of cerebrovascular accidents have been reported.

#### General disorders and administration site conditions:

Reactions at the site of injection (burning, pain, reddening, swelling, urticaria, necrosis in connection with extravasation) have been reported. Fever, chills and mucositis have occasionally been observed.

#### DRUG INTERACTIONS:

Carboplatin may interact with aluminium to form a black precipitate. Needles, syringes, catheters or IV administration sets that contain aluminium parts which may come into contact with carboplatin, should not be used for the preparation or administration of the drug. Due to the increase of thrombotic risk in cases of tumoral diseases, the use of anticoagulative treatment is frequent. The high intra-individual variability of the coagulability during diseases, and the possibility of interaction between oral anticoagulants and anticancer chemotherapy, may require an increase in frequency of INR monitoring if a patient is treated with oral anticoagulants.

#### Concomitant use contraindicated

Yellow fever vaccine: risk of generalized disease mortal.

#### Concomitant use not recommended

- Live attenuated vaccines (except yellow fever): Risk of systemic, possible fatal disease. This risk is increased in subjects who are already immunosuppressed by their underlying disease. Use an inactivated vaccine where this exist (poliomyelitis).
- Phenytoin, fosphenytoin: Risk of exacerbation of convulsions (resulting from the decrease of phenytoin digestive absorption by the cytotoxic drug), risk of toxicity enhancement or loss of efficacy of the cytotoxic drug (due to increased hepatic metabolism by phenytoin).

#### Concomitant use to take into consideration

- Ciclosporin (and by extrapolation tacrolimus and sirolimus): Excessive immunosuppression with risk of lymph proliferation.

- Concurrent therapy with nephrotoxic or ototoxic drugs such as aminoglycosides, vancomycin, capreomycin and diuretics, may increase or exacerbate toxicity, particularly in renal failure patients, due to carboplatin induced changes in renal clearance.

- Loop diuretics: The concomitant use of carboplatin with loop diuretic should be approached with caution due to the cumulative nephrotoxicity and ototoxicity.

Combination therapy with other myelosuppressive agents may require dose changes or rescheduling of doses in order to minimise the additive myelosuppressive effects.

#### CONTRAINDICATIONS:

Carboplatin is contraindicated in:

- Hypersensitivity to the active substance or to any of the excipients.
- Patients with severe myelosuppression
- Patients with pre-existing severe renal impairment (with creatinine clearance of < 30 ml per minute) unless in the judgment of the physician and patient, the possible benefits of treatment outweigh the risks
- Patients with bleeding tumours
- Concomitant use with yellow fever vaccine.
- Patients with a history of severe allergic reaction to carboplatin or other platinum containing compounds.

Dosage adjustment may allow use in the presence of mild renal impairment.

#### OVERDOSAGE:

There is no known antidote for carboplatin over dosage. No over dosage occurred during clinical trials. If necessary, however, the patient may need supportive treatment relating to myelosuppression, renal, hepatic and auditory function impairment. Reports of doses up to 1600mg/m<sup>2</sup> indicate patients feeling extremely ill with diarrhea and alopecia developing. Use of higher than recommended doses of carboplatin has been associated with loss of vision

#### STORAGE & INSTRUCTIONS:

Store between 15-25°C. Protect from heat, sunlight and moisture. Keep away from the reach of the children.

To be sold on the prescription of a registered oncologist or on demand from cancer hospitals and institutions only.

#### HOW SUPPLIED:

Carbosol Injection 450mg/45ml  
1 vial.

خوراک و طریقہ استعمال:

سرطان کے ڈاکٹر کی ہدایت کے مطابق استعمال کریں۔

ہدایات:

۱۵-۲۵ ڈگری سینٹی گریڈ درجہ حرارت کے درمیان رکھیں۔

دھوپ، گرمی اور نمی سے بچائیں۔

بچوں کی پہنچ سے دور رکھیں۔

صرف مستند اور کولو جسٹ یا کینسر ہسپتال کے نئے پرفر وخت کریں۔

Manufactured by:

**PHARMASOL**  
**PRIVATE LIMITED**

Plot # 549, Sundar Industrial Estate,  
Lahore, Pakistan.