



Scheduling status: **S4**

Proprietary names and dosage forms:

Cisplatin 10 mg/20 ml Oethmaan solution for infusion Cisplatin 50 mg/100 ml Oethmaan solution for infusion

Composition:

Cisplatin 10 mg/20 ml Oethmaan solution for infusion: Each 1.0 ml of solution for infusion contains 0.5 mg cisplatin.
Cisplatin 50 mg/100 ml Oethmaan solution for infusion: Each 1.0 ml of solution for infusion contains 0.5 mg cisplatin.
Other Excipients: Sodium chloride, hydrochloric acid, water for injection.

Pharmacological classification:

A 26 Cytostatic agents.

Pharmacological action:

Cisplatin is a platinum co-ordination compound with antitumour properties. The platinum complexes can react with DNA forming both interstrand and intrastrand DNA cross links. In addition to its reactivity with DNA, cisplatin can react with other nucleophiles, such as sulphhydryl groups of proteins. There is no phase specificity. Cisplatin is active in the action of cisplatin on the cell cycle. At rapid intravenous administration the medicine has an initial half-life in plasma of 25 to 50 minutes; concentrations decline subsequently with a half-life of 58 to 73 hours. More than 90 % of the platinum in the blood is bound to plasma proteins. High concentrations of cisplatin are found in the kidney, liver, intestine and testes, but there is poor penetration into the central nervous system.

Indications:

Cisplatin 10 mg/20 ml Oethmaan and Cisplatin 50 mg/100 ml Oethmaan are indicated for advanced, non-seminomatous testicular cancer in combination therapy with bleomycin and vinorelbine.
Carcinoma of the ovary, particularly when used with cyclophosphamide or doxorubicin.
Cancers of the bladder, head and neck, endometrium, small cell carcinoma of the lung, lymphomas and some neoplasms of childhood.

Contraindications:

Cisplatin 10 mg/20 ml Oethmaan and Cisplatin 50 mg/100 ml Oethmaan are contraindicated in patients with a history of allergic reactions to cisplatin or other platinum containing compounds, or any component of the formulation. **Cisplatin 10 mg/20 ml Oethmaan and Cisplatin 50 mg/100 ml Oethmaan** are contraindicated in patients with pre-existing renal impairment or hearing impairment of bone marrow depression. Cisplatin is nephrotoxic and neurotoxic (in particular ototoxic). These toxicities may be cumulative if disorders of this type pre-exist. Patients receiving cisplatin should not breastfeed. Concurrent administration of yellow fever vaccine is contraindicated. Pregnancy and lactation, (see "Pregnancy and Lactation").

Warnings:

Cisplatin 10 mg/20 ml Oethmaan and Cisplatin 50 mg/100 ml Oethmaan should be administered under the supervision of a qualified medical practitioner experienced in the use of antineoplastic therapy. Appropriate management of therapy and complications is possible only when adequate diagnostic and treatment facilities are readily available.

Nephrotoxicity

Cisplatin causes severe cumulative nephrotoxicity. A urine output of 100 mL/hour or greater will tend to minimize cisplatin nephrotoxicity. This can be accomplished by pre-hydration with 2 liters of an appropriate intravenous solution, and similar post cisplatin hydration (recommended 2.500 mL/m²/24 hours). If vigorous hydration is insufficient to maintain adequate urinary output, an osmotic diuretic may be administered (e.g., mannitol).

Neuropathies

Symptoms of neuropathies have been reported. These neuropathies may be irreversible and may manifest by paraesthesia, areflexia and a proprioceptive loss and a sensation of vibrations. A loss of motor function has also been reported. A neurologic examination must be carried out at regular intervals.

Ototoxicity

Ototoxicity has been observed in up to 31 % of patients treated with a single dose of cisplatin 50 mg/m² and is manifested by tinnitus and/or hearing loss in the high frequency range (4000 to 8000 Hz). Decreased ability to hear conversational tones may occur occasionally. Ototoxic effect may be more pronounced in children receiving cisplatin. Hearing loss can be unilateral or bilateral and tends to become more frequent and severe with repeated doses. However, deafness after initial dose of cisplatin has been reported rarely. Ototoxicity may be enhanced with prior simultaneous cranial irradiation and may be related to peak plasma concentration of cisplatin. It is unclear whether cisplatin induced ototoxicity is reversible. Careful monitoring by audiometry should be performed prior to initiation of therapy and prior to subsequent doses of cisplatin. Vestibular toxicity has also been reported (see Side effects).

Allergic phenomena

As with other platinum-based products, hypersensitivity reactions appearing in most cases during perfusion may occur, and necessitate discontinuation of the perfusion and an appropriate symptomatic treatment. Cross reactions, sometimes fatal, have been reported with all the platinum compounds (see Contraindications and Side effects). Hepatic function and hematological formula. The hematological formula and the hepatic function must be monitored at regular intervals.

Carcinogenic potential

In humans, in rare cases the appearance of acute leukemia has coincided with use of cisplatin, which was in general associated with other leukemogenic agents. Cisplatin is a bacterial mutagen and causes chromosome aberrations in cultures on animal cells. Carcinogenicity is possible but has not been demonstrated. Cisplatin is teratogenic and embryotoxic in mice. Because of the possibility of carcinogenicity and mutagenicity **Cisplatin 10 mg/20 ml Oethmaan and Cisplatin 50 mg/100 ml Oethmaan**, patients of child bearing age or conceiving potential must exercise non-hormonal contraception.

Injection site reactions

Injection site reactions may occur during the administration of cisplatin. Given the possibility of extravasation, it is recommended to closely monitor the infusion site for possible infiltration during drug administration. A specific treatment for extravasation reactions is unknown at this time.

Warning

This cytostatic agent has a more marked toxicity than is usually found in antineoplastic chemotherapy. Renal toxicity, which is above-all cumulative, is severe and requires particular precautions during administration (see method of administration and Side effects). Nausea and vomiting may be intense and require adequate antiemetic treatment. Close supervision must also be carried out with regard to ototoxicity, myelodepression and anaphylactic reactions (see Side effects).

Preparation of the intravenous solution

As with all other potentially toxic products, precautions are essential when handling the cisplatin solution. Skin lesions are possible in the event of accidental exposure to the product. It is advisable to wear gloves. In the event the cisplatin solution comes into contact with the skin or mucous membranes, wash the skin or mucous membranes vigorously with soap and water. Conforming to the procedures appropriate for the manipulation and elimination of cytostatic agents is recommended. Before administering the solution to the patient, verify the clarity of the solution and the absence of particles.

Interactions:

Combinations of the following medications may also interact **Cisplatin 10 mg/20 ml Oethmaan and Cisplatin 50 mg/100 ml Oethmaan**. The reaction is dose dependant: blood dyscrasias causing medications, bone marrow depressants (particularly adriamycin) or radio therapy, nephrotoxic medication (amino glycoside antibiotics), ototoxic medication, killed virus vaccines.

Nephrotoxic substances

Concomitant administration of nephrotoxic (e.g. cephalosporins, aminoglycosides, amphotericin B or contrast media) or ototoxic (e.g. aminoglycosides) medicinal products will potentiate the toxic effect of cisplatin on the kidneys. During or after treatment with **Cisplatin 10 mg/20 ml Oethmaan and Cisplatin 50 mg/100 ml Oethmaan** caution is advised with predominantly renally eliminated substances, e.g. cytostatic agents such as bleomycin and methotrexate, because of potentially reduced renal elimination. The renal toxicity of ifosfamide may be greater when used with cisplatin or in patients who have previously been given cisplatin. Reduction of the blood's lithium values was noticed in a few cases after treatment with cisplatin combined with bleomycin and ifosfamide. It is therefore recommended to monitor the lithium values.

Ototoxic substances

Concomitant administration of ototoxic (e.g. aminoglycosides, loop diuretics) medicinal products will potentiate the toxic effect of cisplatin on auditory function. Except for patients receiving doses of cisplatin exceeding 60 mg/m², whose urine secretion is less than 1000 ml per 24 hours, no forced diuresis with loop diuretics should be applied in view of possible damage to the kidney tract and ototoxicity. Ifosfamide may increase hearing loss due to cisplatin.

Pregnancy and lactation:

Cisplatin is contraindicated in pregnancy and lactation. During treatment with cisplatin and for a minimum of the following 6 months, appropriate measures must be taken to avoid pregnancy; this applies to patients of both genders. Genetic counseling is recommended if the patient wishes to have children after ending the treatment. Since a treatment with cisplatin may cause irreversible infertility, it is recommended that men, who wish to become fathers in the future, ask for advice regarding cryo-conservation of their sperm prior to treatment.

Breastfeeding

Cisplatin is excreted in breast milk. Patients treated with cisplatin must not breastfeed.

Dosage and directions for use:

The medical practitioner should in all cases familiarize himself/herself with the current literature before **Cisplatin 10 mg/20 ml Oethmaan and Cisplatin 50 mg/100 ml Oethmaan** are given by intravenous infusion not more frequently than every 3 to 4 weeks. It is usually given as a single dose of 50 to 120 mg per m² daily for 5 days. Subsequent doses should be adjusted according to the nadir of the white-blood cell and platelet counts or before renal function approaches normal. Auditory acuity must also be within normal

limits.

Lower doses may be required when **Cisplatin 10 mg/20 ml Oethmaan and Cisplatin 50 mg/100 ml Oethmaan** are given as part of a combination regimen. Lower doses may be given ranging from 20 mg per m² upwards every 3 to 4 weeks.

In order to prevent renal toxicity, hydration of the patient is recommended by infusion of 1 to 2 litres of suitable fluid containing 37.5 g mannitol for intravenous infusion for 8 to 12 hours before administration of cisplatin.

Adequate hydration and urinary output must be maintained before and for 24 hours after administration. Concurrent furosemide may also be used provided that salt and water depletion are avoided.

Any solution not used must be discarded.

Dosage adjustments are needed in cases of impaired renal function, use in elderly patients or use in combination with other myelosuppressive agents.

Note: **Cisplatin 10 mg/20 ml Oethmaan and Cisplatin 50 mg/100 ml Oethmaan** are incompatible with aluminium, do not use needles, intravenous sets or equipment containing aluminium for administration since an interaction may occur and a black precipitate will form. Guidelines for the handling of antineoplastic agents must be followed. Cautious and proper disposal of needles, syringes, containers and unused medication must be done.

Side-effects and special precautions:

Side effects depend on the used dose and may have cumulative effects.

Many of the adverse effects of **Cisplatin 10 mg/20 ml Oethmaan and Cisplatin 50 mg/100 ml Oethmaan** are an extension of their therapeutic action, which is not selective for malignant cells, but affects all rapidly dividing cells. In consequence, adverse effects may be expected where normal cell division is fairly rapid, e.g. the bone marrow, lymphoreticular tissue, gastro-intestinal mucosa, skin and gonads, as well as in the foetus. Serious toxic effect, on the kidneys, bone-marrow depression and ears, occur. These effects are generally dose related and cumulative, and may require dosage adjustment.

Frequencies are defined using the following convention:

Frequent: (≥ 1/10); (≥ 1/100 to < 1/10);

Less frequent: (≥ 1/1,000 to < 1/100); (≥ 1/10,000 to ≤ 1/1,000); (≤ 1/10,000), not known (cannot be estimated from the available data).

Adverse Drug Events reported during clinical or post-marketing experience (MedDRA terms)

Infections and infestations	
Frequent:	Sepsis
Not known:	Infection (infectious complications fatal in some patients)
Blood and lymphatic system disorders	
Frequent:	Bone marrow failure, thrombocytopenia, leukopenia, anemia
Not known:	Coombs positive hemolytic anemia
Neoplasm benign, malignant and unspecified	
Less frequent:	Acute leukemia
Immune system disorders	
Less frequent:	Anaphylactoid reactions (such as facial edema, wheezing, bronchospasm, tachycardia, hypotension)
Endocrine disorders	
Not known:	Blood amylase increased, inappropriate antidiuretic hormone secretion
Metabolism and nutrition disorders	
Frequent:	Hyponatremia
Less frequent:	Hypomagnesemia
Not known:	Dehydration, hypokalemia, hypophosphatemia, hyperuricemia, hypocalcemia, tetany
Nervous system disorders	
Less frequent:	Convulsion, neuropathy peripheral, leukoencephalopathy, reversible posterior leukoencephalopathy syndrome
Not known:	Cerebrovascular accident, hemorrhagic stroke, ischemic stroke, agnesia, cerebral arteritis, Lhermitte's sign, myelopathy, autonomic neuropathy
Eye disorders	
Not known:	Vision blurred, color blindness acquired, blindness cortical, optic neuritis, papilloedema, retinal pigmentation
Ear and labyrinth disorders	
Less frequent:	Ototoxicity
Not known:	Tinnitus, deafness
Cardiac disorders	
Frequent:	Arrhythmia, bradycardia, tachycardia
Less frequent:	Myocardial infarction, Cardiac arrest
Not known:	Cardiac disorder
Vascular disorders	
Not known:	Thrombotic microangiopathy (hemolytic uremic syndrome), Raynaud's phenomenon
Gastrointestinal disorders	
Less frequent:	Stomatitis
Not known:	Vomiting, nausea, anorexia, hiccups, diarrhea
Hepatobiliary disorders	
Not known:	Hepatic enzymes increased, blood bilirubin increased
Respiratory, thoracic and mediastinal disorders	
Not known:	Pulmonary embolism
Skin and subcutaneous tissue disorders	
Not known:	Rash, alopecia
Musculoskeletal, connective tissue and bone disorders	
Not known:	Muscle spasms
Renal and urinary disorders	
Not known:	Renal failure acute, renal failure (including elevations in BUN and creatinine, serum uric acid, and/or a decrease in creatinine clearance), renal tubular disorder
Reproductive system and breast disorders	
Less frequent:	Abnormal spermatogenesis
General disorders and administration site conditions	
Frequent:	Pyrexia
Not known:	Asthenia, malaise, injection site extravasation (with resulting local soft tissue toxicity including tissue cellulitis, fibrosis and necrosis, pain, edema and erythema)

Effects on ability to drive and use machines

No studies on the effects on ability to drive and use machines have been performed. Nevertheless, the profile of undesirable effects (like nephrotoxicity) may influence the ability to drive vehicles and use machinery.

Known symptoms of over-dosage and particulars of its treatment:

Caution is essential in order to prevent an inadvertent overdose. An acute overdose of cisplatin may result in renal failure, liver failure, deafness, ocular toxicity (including detachment of the retina), significant myelosuppression, unrelievable nausea and vomiting and/or neuritis. An overdose may be fatal. There is no specific antidote in the event of a cisplatin overdose. Even if hemodialysis is initiated 4 hours after the overdose it has little effect on the elimination of cisplatin from the body due to a strong and rapid fixation of cisplatin to proteins. Treatment should be symptomatic and supportive.

Identification:

Cisplatin 10 mg/ 20 ml Oethmaan Solution for infusion:

Clear, colourless to light-yellow solution, practically free from visible particles.

Cisplatin 50 mg/100 ml Oethmaan Solution for infusion:

Clear, colourless to light-yellow solution, practically free from visible particles.

Presentation:

Cisplatin 10 mg/ 20 ml Oethmaan solution for infusion:
Brown glass vials (20 ml) closed with a chlorobutyl rubber stopper. Cartons contain either 1 or 10 glass vials.

Cisplatin 50 mg/100 ml Oethmaan solution for infusion:
Brown glass vials (100 ml) closed with a chlorobutyl rubber stopper. Cartons contain either 1 or 10 glass vials.

Storage instructions:

Store below 25 °C.

Do not refrigerate.

Protect from light. Any unused portion must be discarded.

KEEP OUT OF THE REACH OF CHILDREN.

Registration numbers:

Cisplatin 10 mg/ 20 ml Oethmaan solution for infusion: 37/25/0523

Cisplatin 50 mg/ 100 ml Oethmaan solution for infusion: 37/25/0524

Name and business address of the holder of the certificates of registration:

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