Cisplatin

Cisplatin is a chemotherapy medication which works to trigger apoptosis in tumor cells by crosslinking their DNA. It is used intravenously to treat solid malignancies, or carcinomas. These include ovarian, pulmonary, bladder and testicular carcinomas. This drug is known to cause nephrotoxicity and ototoxicity.

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Indications

Carcinomas
Car-gnome
This med is used to treat solid malignancies and works against various cancers. Most notably, cisplatin is used to treat carcinomas, although it can sometimes be used to treat sarcomas.

Ovarian
Ovary
Cisplatin is used to treat ovarian carcinoma, however treatment is dependent on the histology of the cancer. Often, cisplatin therapy is combined with surgery or radiation therapy.

Bladder
Bladder
Cisplatin is indicated to treat bladder carcinoma.

Lung
Lungs
Cisplatin is used in lung carcinomas, most notably small cell carcinoma. It is typically combined with radiation therapy.

Testicular
Testicles
Cisplatin is also indicated for treating testicular carcinomas. It can be used as adjuvant therapy after surgery, to treat malignant spread and recurring malignancy.

Mechanism

Cross-Links DNA
Linked DNA
This drug interferes with cell mitosis, crosslinking DNA. These crosslinked DNA are unable to be replicated and are considered damaged. The DNA is irreparable, activating apoptosis (cell death).

Side Effects

Ototoxicity
Ear with Toxic-green-glow
Ototoxicity is a known side effect of cisplatin therapy, and occurs due to acoustic nerve damage. Cisplatin may lead to reactive oxygen species that damage the stria vascularis of the inner ear. This drug is never combined with aminoglycosides, which also lead to this side effect.

Nephrotoxicity

Kidney with Toxic-green-glow

A known side effect and major concern of cisplatin chemotherapy is nephrotoxicity. This drug creates reactive oxygen species, which damage the kidney. You should be aware of the patient's creatinine clearance, and decrease the dose as needed.

Treat with Amifostine and Chloride Diuresis

Army-frosting and Chloride-dispenser Die-rocket

Nephrotoxicity is prevented by using amifostine, which scavenges free radicals and neutralizes them, along with chloride diuresis.