Daunorubicin (daunorubicin citrate liposome injection)

**Warnings**

**Mechanism of Action**

Daunorubicin is a member of a class of antineoplastic agents known as the anthracyclines. Daunorubicin is a liposomal formulation of daunorubicin citrate. The drug is believed to cause cell death by interfering with the synthesis and repair of DNA in rapidly growing cells.

**Pharmacokinetics**

**Distribution**

Daunorubicin is rapidly distributed into tissues and is found in blood and tissue factors within minutes of administration. Daunorubicin has a volume of distribution of 1.5-2.5 liters/kg and is not appreciably bound to plasma proteins. Daunorubicin is predominantly eliminated by the renal route and has a terminal elimination half-life of 2-4 hours.

**Metabolism**

Daunorubicin is not metabolized by the liver, and most of the drug is excreted in the urine unchanged. Daunorubicin has been detected in plasma and urine for up to 1 week after administration. Daunorubicin is excreted in breast milk.

**Excretion**

Daunorubicin is excreted in the urine as the parent compound. The clearance of daunorubicin is approximately 17 mL/min, and the volume of distribution at steady state is approximately 2 liters/kg.

**Precautions**

Daunorubicin is associated with severe myelosuppression, particularly thrombocytopenia and neutropenia. Cytopenias occur within 1-2 weeks after administration and may last for 4-6 weeks.

**Adverse Reactions**

The most common adverse reactions associated with Daunorubicin are myelosuppression, mucositis, nausea and vomiting, alopecia, hyperpigmentation, and peripheral neuropathy.

**Dosage and Administration**

Daunorubicin should be given slowly over a 1- to 2-minute period, followed by an equal volume of normal saline solution. Daunorubicin should not be mixed with other drugs or solutions and should be administered intravenously only.

**Overdosage**

Acute overdosage of Daunorubicin is managed by treatment of the adverse reactions that may result from the drug. There is no specific antidote for Daunorubicin overdosage.

**References**
