Paclitaxel:

Class:

- Antimicrotubular , Antineoplastic Agent, Taxane Derivative

Indications:

- Treatment of breast,
- nonsmall cell lung,
- ovarian cancers;
- treatment of AIDS-related Kaposi's sarcoma (KS)

Unlabeled use :

- Treatment of bladder, cervical, small cell lung, and head and neck cancers;
- treatment of (unknown primary) adenocarcinoma

Available dosage form in the hospital:

5 IU ampoule
150 mg / 25 ml vial
30, 300 mg vial
500 mg / 50 ml vial
6 mg / ml , 50 ml injection
6 mg / ml , 100 ml vial

Trade Names:

Aclipak , Aclixel , Alzene , Anzatax , Asotax , Biotax , Bristaxol , Britaxol , Clitaxel , Cryoxet , Dalys , Ebetaxel , Genaxol , Genetaxyl , Genexol , Intaxel , Meditaxel , Paclitaxin , Pacxel , Padexol , Panataxel , Parexel , Paxel ,Paxene , Paxus , Praxel , Sindaxel ,Taxocris , Taxol .

Dosage:

Note: Premedication with dexamethasone (20 mg orally or I.V. at 12 and 6 hours **or** 14 and 7 hours before the dose; reduce dexamethasone dose to 10 mg orally with advanced HIV disease), diphenhydramine (50 mg I.V. 30-60 minutes prior to the dose), and cimetidine, famotidine, or ranitidine (I.V. 30-60 minutes prior to the dose) is recommended.

-Ovarian carcinoma:I.V:

- 135-175 mg/m^2 over 3 hours every 3 weeks **or**
- 135 mg/m^2 over 24 hours every 3 weeks **or**
- 50-80 mg/m^2 over 1-3 hours weekly **or**
- 1.4-4 mg/m^2/day continuous infusion for 14 days every 4 weeks

-Intraperitoneal (unlabeled route): 60 mg/m^2 on day 8 of a 21-day treatment cycle for 6 cycles, in combination with I.V. paclitaxel and intraperitoneal cisplatin. **Note:** Administration of intraperitoneal paclitaxel should include the standard paclitaxel premedication regimen.

-Metastatic breast cancer: I.V.:

- 175-250 mg/m^2 over 3 hours every 3 weeks **or**
- 50-80 mg/m^2 weekly **or**
- 1.4-4 mg/m^2/day continuous infusion for 14 days every 4 weeks

-Nonsmall cell lung carcinoma: I.V.: 135 mg/m^2 over 24 hours every 3 weeks

-AIDS-related Kaposi's sarcoma: I.V.:

- 135 mg/m^2 over 3 hours every 3 weeks

- **or** 100 mg/m^2 over 3 hours every 2 weeks

Geriatric

Refer to adult dosing.

Renal Impairment:

No dosage adjustment provided in manufacturer's labeling. Aronoff (2007) recommends no dosage adjustment necessary for adults with Cl_{cr} <50 mL/minute.

Hepatic Impairment: Note: The FDA-approved labeling recommendations are based upon the patient's first course of therapy where the usual dose would be 135 mg/m^2 dose over 24 hours or the 175 mg/m^2 dose over 3 hours in patients with normal hepatic function. Dosage in subsequent courses should be based upon individual tolerance. Adjustments for other regimens are not available.

24-hour infusion:

- Transaminases <2 times upper limit of normal (ULN) and bilirubin level ≤1.5 mg/dL: 135 mg/m^2
- Transaminases 2-<10 times ULN and bilirubin level ≤1.5 mg/dL: 100 mg/m^2
- Transaminases <10 times ULN and bilirubin level 1.6-7.5 mg/dL: 50 mg/m^2
- Transaminases ≥10 times ULN or bilirubin level >7.5 mg/dL: Avoid use

3-hour infusion:

- Transaminases <10 times ULN and bilirubin level ≤1.25 times ULN: 175 mg/m^2
- Transaminases <10 times ULN and bilirubin level 1.26-2 times ULN: 135 mg/m^2
- Transaminases <10 times ULN and bilirubin level 2.01-5 times ULN: 90 mg/m^2
- Transaminases ≥10 times ULN or bilirubin level >5 times ULN: Avoid use

Dosing: Obesity

ASCO Guidelines for appropriate chemotherapy dosing in obese adults with cancer: Utilize patient's actual body weight (full weight) for calculation of body surface area- or weight-based dosing, particularly when the intent of therapy is curative; manage regimen-related toxicities in the same manner as for nonobese patients; if a dose reduction is utilized due to toxicity, consider resumption of full weight-based dosing with subsequent cycles, especially if cause of toxicity (eg, hepatic or renal impairment) is resolved (Griggs, 2012).

Dosing: Adjustment for Toxicity

-Dosage modification for toxicity (solid tumors, including ovary, breast, and lung carcinoma): Courses of paclitaxel should not be repeated until the neutrophil count is ≥1500 cells/mm^3 and the platelet count is ≥100,000 cells/mm^3; reduce dosage by 20% for patients experiencing severe peripheral neuropathy or severe neutropenia (neutrophil <500 cells/mm^{3}for a week or longer)

-Dosage modification for immunosuppression in advanced HIV disease: Paclitaxel should not be given to patients with HIV if the baseline or subsequent neutrophil count is <1000 cells/mm^3. Additional modifications include: Reduce dosage of dexamethasone in premedication to 10 mg

orally; reduce dosage by 20% in patients experiencing severe peripheral neuropathy or severe neutropenia (neutrophil <500 cells/mm^3 for a week or longer); initiate concurrent hematopoietic growth factor (G-CSF) as clinically indicated

Common side effect:

- Cardiovascular: Flushing (28%), ECG abnormal (14% to 23%), edema (21%), hypotension (4% to 12%)
- Dermatologic: Alopecia (87%), rash (12%)
- Gastrointestinal: Nausea/vomiting (52%), diarrhea (38%), mucositis (17% to 35%; grades 3/4: up to 3%), stomatitis (15%; most common at doses >390 mg/m^2), abdominal pain (with intraperitoneal paclitaxel)
- Hematologic: Neutropenia (78% to 98%; grade 4: 14% to 75%; onset 8-10 days, median nadir 11 days, recovery 15-21 days), leukopenia (90%; grade 4: 17%), anemia (47% to 90%; grades 3/4: 2% to 16%), thrombocytopenia (4% to 20%; grades 3/4: 1% to 7%), bleeding (14%)
- Hepatic: Alkaline phosphatase increased (22%), AST increased (19%)
- Local: Injection site reaction (erythema, tenderness, skin discoloration, swelling: 13%)
- Neuromuscular & skeletal: Peripheral neuropathy (42% to 70%; grades 3/4: up to 7%), arthralgia/myalgia (60%), weakness (17%)
- Renal: Creatinine increased (observed in KS patients only: 18% to 34%; severe: 5% to 7%)
- Miscellaneous: Hypersensitivity reaction (31% to 45%; grades 3/4: up to 2%), infection (15% to 30%)

Pregnancy Risk Factor: **D**