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 500 mg / 50 ml vial
- 150 mg / 25 ml vial 6 mg / ml, 50 ml injection
- 30, 300 mg vial 6 mg / ml, 100 ml vial

Trade Names:

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/m² over 3 hours every 3 weeks or
- 135 mg/m² over 24 hours every 3 weeks or
- 50-80 mg/m² over 1-3 hours weekly or
- 1.4-4 mg/m²/day continuous infusion for 14 days every 4 weeks

-Intraperitoneal (unlabeled route): 60 mg/m² 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/m² over 3 hours every 3 weeks or
- 50-80 mg/m² weekly or
- 1.4-4 mg/m²/day continuous infusion for 14 days every 4 weeks

-Nonsmall cell lung carcinoma: I.V.: 135 mg/m² over 24 hours every 3 weeks

-AIDS-related Kaposi's sarcoma: I.V.:
- 135 mg/m² over 3 hours every 3 weeks
- or 100 mg/m² 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 Clcr <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/m² dose over 24 hours or the 175 mg/m² 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/m²
- Transaminases 2-<10 times ULN and bilirubin level ≤1.5 mg/dL: 100 mg/m²
- Transaminases <10 times ULN and bilirubin level 1.6-7.5 mg/dL: 50 mg/m²
- 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/m²
- Transaminases <10 times ULN and bilirubin level 1.26-2 times ULN: 135 mg/m²
- Transaminases <10 times ULN and bilirubin level 2.01-5 times ULN: 90 mg/m²
- 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/mm³ and the platelet count is ≥100,000 cells/mm³; reduce dosage by 20% for patients experiencing severe peripheral neuropathy or severe neutropenia (neutrophil <500 cells/mm³ 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/mm³. 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/mm³ 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/m²), 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