Doxorubicin

Class: Antineoplastic Agent, Anthracycline

Indications:

_acute myeloid leukemia (AML)**,** acute lymphocytic leukemia (ALL), Hodgkin's disease

_malignant lymphoma**,** soft tissue and bone sarcomas**,** thyroid cancer

_small cell lung cancer, breast cancer**,** gastric cancer**,** ovarian cancer

_bladder cancer, neuroblastoma**,** and Wilms' tumor.

Unlabeled use:

multiple myeloma, endometrial carcinoma, uterine sarcoma, head and neck cancer, liver cancer, kidney cancer

Available dosage form in the hospital:

10 mg AMP

50 mg AMP

Trade Names:

Adriamycin

Doses: Refer to individual protocols. **Note:** Lower dosage should be considered for patients with inadequate marrow reserve (due to old age, prior treatment or neoplastic marrow infiltration).

Usual or typical dosages:

I.V.: 60-75 mg/m^2/dose every 21 days

or 60 mg/m^2/dose every 2 weeks (dose dense)

or 40-60 mg/m^2/dose every 3-4 weeks

or 20-30 mg/m^2/day for 2-3 days every 4 weeks

or 20 mg/m^2/dose once weekly .

Geriatric

Refer to adult dosing.

Renal Impairment:

Adjustments are not required.

Hemodialysis: Supplemental dose is not necessary.

Hepatic Impairment:

The FDA-approved labeling recommends the following adjustments:

- Serum bilirubin 1.2-3 mg/dL: Administer 50% of dose
- Serum bilirubin 3.1-5 mg/dL: Administer 25% of dose
- Severe hepatic impairment: Use is contraindicated

The following guidelines have been used by some clinicians: Floyd, 2006:

- Transaminases 2-3 times ULN: Administer 75% of dose
- Transaminases >3 times ULN or serum bilirubin 1.2-3 mg/dL: Administer 50% of dose
- Serum bilirubin 3.1-5 mg/dL: Administer 25% of dose
- Serum bilirubin >5 mg/dL: Do not administer.

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

The following delays and/or dose reductions have been used:

- Neutropenic fever/infection: Consider reducing to 75% of dose in subsequent cycles
- ANC <1000/mm^3: Delay treatment until ANC recovers to ≥1000/mm^3
- Platelets <100,000/mm^3: Delay treatment until platelets recover to ≥100,000/mm^3

Common side effects:

Cardiovascular: Acute cardiotoxicity: Atrioventricular block, bradycardia, bundle branch block, ECG abnormalities, extra systoles (atrial or ventricular), sinus tachycardia, ST-T wave changes, supraventricular tachycardia, tachyarrhythmia, ventricular tachycardia

Delayed cardiotoxicity: LVEF decreased, CHF (manifestations include ascites, cardiomegaly, dyspnea, edema, gallop rhythm, hepatomegaly, oliguria, pleural effusion, pulmonary edema, tachycardia); myocarditis, pericarditis

Central nervous system: Malaise

Dermatologic: Alopecia, itching, photosensitivity, radiation recall, rash; discoloration of saliva, sweat, or tears

Endocrine & metabolic: Amenorrhea, dehydration, infertility (may be temporary), hyperuricemia

Gastrointestinal: Abdominal pain, anorexia, colon necrosis, diarrhea, GI ulceration, mucositis, nausea, vomiting

Genitourinary: Discoloration of urine

Hematologic: Leukopenia/neutropenia (75%; nadir: 10-14 days; recovery: by day 21); thrombocytopenia and anemia

Local: Skin "flare" at injection site, urticaria, Neuromuscular & skeletal: Weakness

Pregnancy Risk Factor: D