Intermittent IV INFUSION route

- No further dilution needed; do not add other medications to vial or infusion device
- For doses equal to single vial, a vented IV set may be used to deliver directly from vial; for doses less than a single vial, withdraw dose and place in an empty sterile syringe, plastic IV container, or glass bottle; infuse over 15 min
- Discard unused portion; if seal is broken, vial penetrated, or drug transferred to another container, give within 6 hr

Y-site: Do not admix

SIDE EFFECTS

CNS: Agitation (child) (IV); headache, fatigue, anxiety (IV)
Resp: Dyspnea (IV), atelectasis (child) (IV)
CV: Hyper- and hypotension (IV)
GI: Nausea, vomiting, abdominal pain; hepatotoxicity, hepatic seizure (overdose), GI bleeding
GU: Renal failure (high, prolonged doses)
HEMA: Leukopenia, neutropenia, hemolytic anemia (long-term use), thrombocytopenia, pancytopenia
INTEG: Rash, urticaria, inj site pain
SYST: Stevens-Johnson syndrome, toxic epidermal necrolysis
TOXICITY: Cyanosis, anemia, neutropenia, jaundice, pancytopenia, CNS stimulation, delirium followed by vascular collapse, seizures, coma, death

PHARMACOKINETICS

85%-90% metabolized by liver, excreted by kidneys; metabolites may be toxic if overdose occurs; widely distributed; crosses placenta in low concentrations; excreted in breast milk; half-life 1-4 hr
PO: Onset 10-30 min, peak $^1/_2$-2 hr, duration 4-6 hr, well absorbed
IV: Onset rapid, peak 30-120 min, duration 3-4 hr
RECT: Onset slow, peak 1-2 hr, duration 4-6 hr, absorption varies

INTERACTIONS

Increase: renal adverse reactions—NSAIDs, salicylates; consider lower dose
Increase: methemoglobinemia—nitric oxide, prilocaine; avoid concurrent use
Increase: hypoprothrombinemia—warfarin, long-term use, high doses of acetaminophen
Increase: hepatotoxicity—barbiturates, alcohol, carBAMazepine, hydantoins, rifAMPin, rifabutin, isoniazid, diflunisal, zidovudine, lamoTRIgine, imatinib, dasatinib, mipomersen; monitor for hepatotoxicity
Decrease: absorption—colestipol, cholestyramine
Decrease: zidovudine, lamoTRIgine effect
Drug/Herb
Increase: hepatotoxicity—St. John's wort, due to acetaminophen metabolism
Drug/Lab Test
Increase: LFTs, potassium, bilirubin, LDH, pro-time
Decrease: Hgb/Hct, WBC, RBC, platelets; albumin, magnesium, phosphate (pediatrics)

NURSING CONSIDERATIONS

Assess:

- **For fever and pain:** Type of pain, location, intensity, duration, aggravating/alleviating factors; assess for diaphoresis, fever, baseline and periodically
- **Hepatic studies:** AST, ALT, bilirubin, creatinine before therapy if long-term therapy is anticipated; may cause hepatic toxicity at doses >4 g/day with chronic use
- **Renal studies:** BUN, urine creatinine, occult blood, albumin, if patient is on long-term therapy; presence of blood or albumin indicates nephritis, I&O ratio; decreasing output may indicate renal failure (long-term therapy)
- **Blood studies:** CBC, PT if patient is on long-term therapy
- **Chronic poisoning:** rapid, weak pulse; dyspnea; cold, clammy extremities; report immediately to prescriber

Black Box Warning: Hepatotoxicity: occurs with high doses (>4 g/day); dark urine; clay-colored stools; yellowing of skin, sclera; itching; abdominal pain; fever; diarrhea if patient is on long-term therapy; may require liver transplant, those malnourished or using alcohol chronically are at higher chance of hepatotoxicity