

Appendix 1. Pharmacy update on parenteral use of acyclovir at Sir Mortimer B Davis Jewish General Hospital. © 2013 Sir Mortimer B Davis Jewish General Hospital. Reproduced with permission.

PHARMACY UPDATE

December 2013

Acyclovir Parenteral Use

There have been several adverse events reported related to the intravenous administration of acyclovir. The usual dose is 5-10mg/kg IV q8h, depending on the indication. Doses greater than 10 mg/kg (max: 15 mg/kg) may be used in rare circumstances after consultation with Infectious Diseases. Acyclovir must be adjusted according to renal function and must be administered with adequate hydration. In obese patients, it is recommended to use the ideal body weight.

CrCl (mL/min)	% or recommended dose	Dosing interval (hours)
>50	100%	8
26-50	100%	12
11-25	100%	24
0-10	50%	24
HD or CAPD	50%	24

Renal dysfunction: Acyclovir can cause an acute kidney injury via 2 possible mechanisms: deposition of acyclovir crystals in the renal tubules, leading to renal obstruction and by direct tubular toxicity. To avoid this from occurring, it is recommended to administer a renally-adjusted dose, avoid rapid administration of the drug, and to ensure that the patient receives adequate hydration.

Administration: To help prevent renal dysfunction, all doses of acyclovir will now be diluted in **250mL of NS or D5W** and run over **2 hours**. Acyclovir should NEVER be administered as an IV push. Moreover, it cannot be administered by the SC or IM route.

Hydration: Administration of acyclovir by intravenous infusion must be accompanied by adequate hydration. If possible, it is recommended to begin hydration prior to starting the treatment (1-2 hours). Particular attention should be paid to patients at risk of fluid overload (e.g. CHF, cirrhosis, etc.)

Other adverse reactions: Approximately 1% of patients receiving IV acyclovir have manifested encephalopathic changes characterized by either lethargy, obtundation, tremors, confusion, hallucinations, agitation, seizures or coma. Acyclovir should be used with caution in patients with underlying neurologic abnormalities. Other common effects to monitor for are nausea/vomiting and inflammation at the injection site.

Safety Recommendations:

- ✓ Providing education to doctors, nurses, and pharmacists about the need to adequately hydrate patients receiving acyclovir – Pharmacy Update circulated
- ✓ Administration in a larger volume over a longer period of time
- ✓ Infusion pump drug library modified to require larger dilution volume
- ✓ Mode of dilution and reminder to ensure adequate hydration on GESPHAR MAR
- ✓ Pharmacists receiving prescriptions for acyclovir to verify if patient has hydration ordered
- ✓ In ED, acyclovir is located in the Pyxis and a POP UP will remind that the patient needs adequate hydration
- ✓ Antibiotics stewardship pharmacists to verify whether the patients receiving acyclovir are maintained on hydration throughout the therapy

Supplementary information for Dubrofsky L, Kerzner RS, Delaunay C, Kolenda C, Pepin J, Schwartz BC. Interdisciplinary systems-based intervention to improve IV hydration during parenteral administration of acyclovir. *Can J Hosp Pharm.* 2016;69(1):7-13.