Stanford Medication Usage Guide
Ribavirin (oral)

Usage

- Ribavirin is FDA approved for the treatment of hepatitis C in combination with IFN-α.
- Off-label: treatment of severe respiratory infections with community-acquired respiratory viruses in immunocompromised patients. E.g.
  - Respiratory syncytial virus (RSV)
  - Metapneumovirus (MPV)
  - Parainfluenza virus (PIV)

Dosing

CrCl	Oral Ribavirin Dosing Regimen for RSV, MPV, PIV (typical duration 5-10 days)
>50	15 – 20 mg/kg/day in 2 to 3 divided doses; round to nearest 200 mg dose (max dose: 1800 mg/day)
30-50	200 mg TID – 400 mg BID[a]
<29, ESRD, IHD	No recommendations exist. Some experts recommend 200 mg daily[a]
CRRT, PD	No recommendations exist. Consult ASP/ID pharmacist

a. The prescribing information for Rebetol® (capsule) states that use is contraindicated if CrCl <50 mL/min. The prescribing information for Copegus® (tablet) states that the dose should be reduced in patients with CrCl ≤ 50 mL/min.

Pharmacokinetics/Pharmacodynamics

Ribavirin pharmacokinetics	
Bioavailability	64%, increased by high fat meal
Distribution	Vd 2,825 L (single dose): distribution significantly prolonged in the erythrocyte (16 to 40 days), which can be used as a marker for intracellular metabolism
Metabolism	Hepatically and intracellularly (forms active metabolites)
Half-life elimination	Capsule: 24h (single dose), 298h (steady state) Tablet: 120-170h (single dose), 288h (multiple doses)
Time to peak, serum	3h (capsule) 2h (tablet)
Excretion	61% urine, 12% feces Note: Plasma ribavirin is removed by hemodialysis with an extraction ratio of approximately 50%; however, due to its large V_d, plasma exposure is not expected to change with hemodialysis

Monitoring Parameters

- Re-evaluate therapy if adverse reactions occur e.g. clinically significant anemia necessitating transfusion may warrant discontinuation or dose decrease.
- Risk of may be increased in those with renal insufficiency, dialysis, low baseline Hgb levels, or concomitant therapy associated with causing bone marrow suppression.

Special Circumstances

- Hazardous drug: do not crush/open capsules/tablets. Product is available as oral solution
- Pregnancy FDA risk category X

References:

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3. Smolders, Elise J., Clara T. M. M. de Kanter, Bart van Hoek, Joop E. Arends, Joost P. H. Drenth, and David M. Burger. "Pharmacokinetics, Efficacy, and Safety of Hepatitis C Virus Drugs in Patients with Liver And/Or Renal Impairment." *Drug Safety* 39, no. 7 (July 2016): 589–611. doi:10.1007/s40264-016-0420-2.
4. Hirsch, Hans H., Rodrigo Martino, Katherine N. Ward, Michael Boeckh, Hermann Einsele, and Per Ljungman. "Fourth European Conference on Infections in Leukaemia (ECIL-4): Guidelines for Diagnosis and Treatment of Human Respiratory Syncytial Virus, Parainfluenza Virus, Metapneumovirus, Rhinovirus, and Coronavirus." *Clinical Infectious Diseases: An Official Publication of the Infectious Diseases Society of America* 56, no. 2 (January 15, 2013): 258–66. doi:10.1093/cid/cis844.
5. Gross, Alan E., and Michelle L. Bryson. "Oral Ribavirin for the Treatment of Noninfluenza Respiratory Viral Infections: A Systematic Review." The Annals of Pharmacotherapy 49, no. 10 (October 2015): 1125–35. doi:10.1177/1060028015597449.
6. Lexi-comp

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B. Gatekeeper: Antimicrobial Stewardship Program

C. Review and Renewal Requirement

This document will be reviewed every three years and as required by change of law or practice

D. Revision/Review History:

E. Approvals

1. Antimicrobial Subcommittee: 8/17/2017

2. P&T: 9/15/2017