INDICATIONS FOR THE USE OF RIBAVIRIN FOR TREATMENT OF RESPIRATORY VIRAL INFECTIONS IN ADULT AND PEDIATRIC HEMATOLOGY PATIENTS

1. This document addresses indications for use and dosing of ribavirin.
   
   **Guidelines for administration of aerosolized ribavirin:**
   - Adult Guidelines
   - Pediatric Guidelines (Use of small particle aerosol generation (SPAG) device)
   - Pharmacy Dispensing Procedures
     - Inhaled Ribavirin Dispensing Procedures for Inpatient Areas

2. Guidelines for the Treatment of Respiratory Syncytial Virus (RSV) in Lung Transplantation are available on OTIS and are not replicated here.

3. Ribavirin therapy should only be considered for infections due to respiratory syncytial virus (RSV). Ribavirin has not been proven to be efficacious for the treatment of infections caused by parainfluenza virus or human metapneumovirus.

4. Aerosolized ribavirin is contraindicated in patients receiving mechanical ventilation due to concerns regarding compatibility with ventilator components. Ribavirin is pregnancy category X.

5. Confirmed RSV infections carry a high morbidity in the following high risk groups and can be considered for aerosolized ribavirin:
   a. Autologous bone marrow transplant (BMT) recipient:
      i. Upper (URI) or lower (LRTI) respiratory tract infections pre-engraftment
      ii. LRTI in the first three months post-transplant
   b. Allogeneic bone marrow transplant recipient:
      i. URI/LRTI pre-engraftment
      ii. LRTI with graft versus host disease (GvHD) and immunosuppression
         1. URI patients on significant immunosuppression can be considered on a case by case basis:
            a. Examples of potentially appropriate patients would include GVHD patients on >1 mg/kg prednisone or have received thymoglobin or alemtuzumab (Campath) in past 3 months, or on 3 or more immunosuppressant medications
            b. Special consideration for cord blood recipients <6 months post-transplant.
      iii. LRTI during the first two years after transplantation
   c. AML/ALL: LRTI in patients who are neutropenic after re-induction chemotherapy for relapsed/refractory disease
   d. Patients who are candidates for, but intolerant of, or incapable of receiving, inhaled ribavirin (such as mechanically ventilated patients) should be considered for oral therapy
   e. If inhaled ribavirin is being considered, an infectious disease consult is mandatory prior to initiating therapy. If there is disagreement regarding the need for inhaled therapy, then the P&T committee chairperson will make the final decision.

6. Confirmed RSV infections in moderate risk patients can be considered for treatment with oral ribavirin:
   a. BMT: most inpatients with URI or LRTI not meeting criteria for aerosolized ribavirin
   b. Acute myeloid leukemia/Acute lymphoblastic leukemia: URI in patients with uncontrolled leukemia for >30 days or with relapsed/refractory disease undergoing re-induction chemotherapy

7. The criteria in above are not absolutely comprehensive. Exceedingly rare cases may present themselves that are not listed but warrant therapy. Such scenarios should be handled on a case-by-case basis in consultation with Infectious Diseases.
8. Duration of therapy: 5-7 days in most cases

9. Dosing of ribavirin
   a. Aerosolized therapy (non-intubated patients): 2 g (over 2 hours) TID
   b. Oral therapy:
      i. CrCl greater than 50 mL/min: 600 TID
      ii. CrCl 31-50 mL/min: 400 mg TID
      iii. CrCl 20-30 mL/min: 200 mg TID
      iv. Less than 20 or requiring hemodialysis: 200 mg Daily
   c. Dose escalation may be considered in patients failing therapy
   d. Oral ribavirin has been associated with anemia and extravascular hemolysis.
      i. Dose decreases may be considered in patients developing toxicity, as ribavirin concentration has been correlated with toxicity.
      ii. Significant anemia is unlikely with short durations of therapy (≤5 days), however, the risk increases with longer durations of therapy.
      iii. Use in patients with severe pre-existing anemia should be done with caution and with close monitoring.
      iv. All patients receiving oral ribavirin should be monitored for anemia and hemolysis. As the elimination half-life of ribavirin is ~2 weeks, clinicians should be cognizant of the potential for anemia to present after ribavirin has been discontinued.
   e. Pediatrics: Consult Pediatric Infectious Diseases for dosing recommendations

The recommendations in this guide are meant to serve as treatment guidelines for use at Michigan Medicine facilities. If you are an individual experiencing a medical emergency, call 911 immediately. These guidelines should not replace a provider’s professional medical advice based on clinical judgment, or be used in lieu of an Infectious Diseases consultation when necessary. As a result of ongoing research, practice guidelines may from time to time change. The authors of these guidelines have made all attempts to ensure the accuracy based on current information, however, due to ongoing research, users of these guidelines are strongly encouraged to confirm the information contained within them through an independent source.

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