

USE OF RIBAVIRIN IN VIRAL RESPIRATORY TRACT INFECTIONS IN SINGAPORE GENERAL HOSPITAL

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Background

Inhaled ribavirin has been shown to be effective in treatment of noninfluenza respiratory tract infections, yet use is limited by its teratogenicity and inconvenience of administration. There has been paucity of data for oral and intravenous ribavirin in noninfluenza respiratory tract infections.

Objectives

- Evaluate efficacy and safety outcomes of ribavirin use in viral respiratory tract infections in the Singapore population.

Methodology

- Single-centre, retrospective study

Patients who have received at least 1 dose of ribavirin between 1st January 2011 and 31st March 2013 were identified from the hospital pharmacy database

Pertinent patient clinical data was retrieved from medical records and results were analyzed qualitatively

Subgroup analysis of combination ribavirin and immunoglobulin (IVIG) therapy versus ribavirin monotherapy efficacy in treatment outcomes were analysed with Chi-square test.

References

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- Khanna, N., A.F. Widmer, M. Decker et al. Clin Infect Dis, 2008. 46(3): p. 402-12

Results

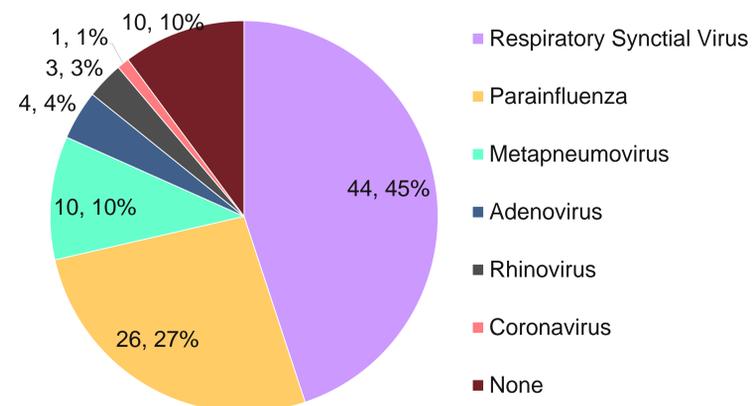
Patient demographics

- A total of 102 patients were identified.
- Only 90 patients were treated with ribavirin for viral respiratory tract infections.
- Median age was 55 (16 - 89) years.
- 77.0% of patients had leukaemia/ lymphoma; 14 patients (15.6%) had a history of bone marrow and/or renal transplant.

Ribavirin treatment

- 88 patients (97.8%) were prescribed oral ribavirin, with only 2 patients prescribed intravenous (IV) ribavirin.
- Majority were treated for respiratory syncytial virus (48.9%) and parainfluenza virus infections (28.9%). Ten patients (11.1%) were treated for metapneumovirus infections. (Figure 1)

Figure 1 Respiratory Viruses Isolated



*More than 1 respiratory virus can be isolated in each patient

- Median ribavirin duration was 6 (1 - 28) days.
- 54.4% had tapered ribavirin regimen.
- 25 patients (27.5%) was prescribed concurrent IVIG and ribavirin.

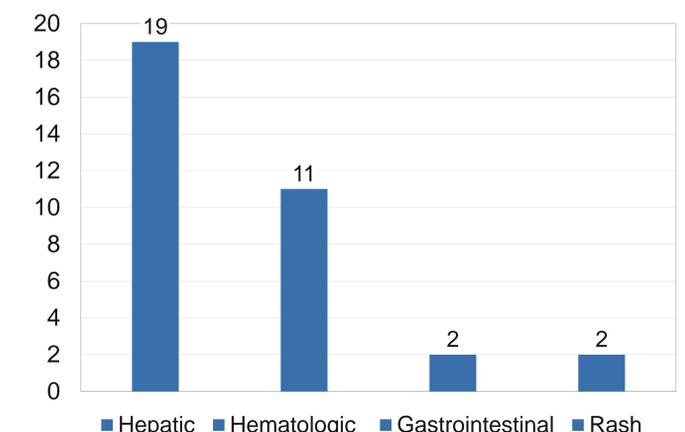
Treatment outcomes

- No difference in clinical improvement and 30-day mortality between ribavirin and IVIG combination therapy versus monotherapy was observed ($p > 0.05$).
- 22 patients (24.4%) had viral eradication and clinical improvement; 15 were immunocompetent.
- 4/22 of patients with viral eradication had 14-day reinfection
- 18 patients (20.0%) had persistent positive respiratory swabs despite clinical improvement; 13 were immunocompromised.
- 30-day mortality was 12.2% (11/90 patients), with cause attributed to pneumonia in 9 patients.

Safety of Ribavirin

- 12 patients (15.4%) did not have dose reduction of ribavirin for renal impairment, with 5 developing adverse drug reactions.
- 19 patients (21.1%) had elevated liver enzymes and 11 (12.2%) had hematologic abnormalities.

Figure 2 Adverse Events



Conclusion

Ribavirin use did not show much utility in the treatment of viral respiratory tract infections, with poor clinical outcomes and high incidence of adverse events.