Oral ribavirin in lung transplant recipients with paramyxoviral infections: A retrospective safety and effectiveness analysis

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Purpose: Paramyxoviral infections (PMVI) result in clinically relevant morbidity and mortality in lung transplant recipients. Oral ribavirin (ORV) is active against RNA-based viruses and may be used for this indication, but supporting data are limited to reports of 11 total patients. The purpose of this retrospective analysis is to evaluate safety and effectiveness of ORV for PMVI in a larger cohort of lung transplant patients.

Methods: This retrospective medical record review evaluated lung transplant recipients who received ORV for PMVI at UPMC Presbyterian Hospital and was approved by the local IRB. Safety endpoints included change in serum creatinine, hemoglobin, leukocytes, platelets, and incidence of hemolysis within 30 days after ORV. Effectiveness endpoints included pulmonary function tests at baseline, 30, 60, 90, and 120 days post ORV. Descriptive statistics were used to define baseline characteristics. Continuous variables were analyzed using students t-test, Wilcoxon rank sum test, or one-way ANOVA, where appropriate.

Results: 21 patients with 22 unique PMVI episodes who received ORV were included. PMVI resulted in significant decline in allograft function from baseline (2.83±1.17 vs. 2.16±1, p<0.001), which remained significantly below baseline 120 days after ribavirin therapy (2.16±1 vs. 1.82±0.93, p=0.002), despite viral clearance. Three patients had multiple positive cultures on repeat sampling; though, all eventually cleared the virus. Toxicities included significant anemia (10.9±1.5 vs. 9±1.7, p<0.001), leukopenia (6.3±4.5 vs. 3.6±1.5, p=0.006), thrombocytopenia (197.8±75.8 vs. 161.2±81.4, p<0.001), and worsening renal function (Scr 1.86±1.1 vs. 2.09±1.2, p=0.002) within 30 days of therapy. However, anemia did not appear to be hemolytic in nature (peak LDH 312.4±243). Drug toxicities prevented 14% of patients from completing a minimum seven-day ORV course.

Conclusions: Treatment with ORV is not associated with improvement of allograft function or return of allograft function to baseline after PMVI infection, despite viral clearance. Although ORV duration was short, significant toxicities were experienced in treated patients.