

Clin Infect Dis. 2008 Feb 1;46(3):402-12.

Respiratory syncytial virus infection in patients with hematological diseases: single-center study and review of the literature.

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BACKGROUND: Respiratory syncytial virus (RSV) causes significant mortality in patients with hematological diseases, but diagnosis and treatment are uncertain. **METHODS:** We retrospectively identified RSV-infected patients with upper or lower respiratory tract infection (RTI) by culture, antigen testing, and polymerase chain reaction from November 2002 through April 2007. Patients with severe immunodeficiency (SID; defined as transplantation in the previous 6 months, T or B cell depletion in the previous 3 months, graft-versus-host disease [grade, ≥ 2], leukopenia, lymphopenia, or hypogammaglobulinemia) preferentially received oral ribavirin, intravenous immunoglobulin, and palivizumab. The remaining patients with moderate immunodeficiency (MID) preferentially received ribavirin and intravenous immunoglobulin. **RESULTS:** We identified 34 patients, 22 of whom had upper RTI (10 patients with MID and 12 with SID) and 12 of whom had lower RTI (2 with MID and 10 with SID). Thirty-one patients were tested by polymerase chain reaction (100% of these patients had positive results; median RSV load, 5.46 log₁₀ copies/mL), 30 were tested by culture (57% had positive results), and 25 were tested by antigen testing (40% had positive results). RSV-attributed mortality was 18% (6 patients died) and was associated with having ≥ 2 SID factors ($P=.04$), lower RTI ($P=.01$), and preengraftment ($P=.012$). Among 12 patients with MID (7 of whom received treatment), no progression or death occurred. Nine patients with SID and upper RTI received treatment (7 patients received ribavirin, intravenous immunoglobulin, and palivizumab); infection progressed to the lower respiratory tract in 2 patients, and 1 patient died. Ten patients with SID and lower RTI were treated, 5 of whom died, including 4 of 6 patients who received ribavirin, intravenous immunoglobulin, and palivizumab. The duration of RSV shedding correlated with the duration of symptoms in patients with SID but exceeded symptom duration in patients with MID ($P<.05$). **CONCLUSIONS:** Lower RTI, ≥ 2 SID criteria, and preengraftment are risk factors for RSV-attributed mortality. Polymerase chain reaction may optimize diagnosis and monitoring. Oral ribavirin therapy seems safe, but trials are needed to demonstrate its efficacy.

PMID: 18181739 [PubMed - indexed for MEDLINE]