

RIBAVIRIN and Crimean-Congo haemorrhagic fever (Bunyaviridae)

Study	Methods	Participants	Interventions	Outcomes	Notes
Watts et al. (24)	In vitro study	African green monkey kidney Vero clone 76 cells (ATCC-CRL-1587)	Vero cell monolayers inoculated with CCHF virus were incubated with ribavirin of different concentrations	Ribavirin doses as low as 5 µg/ml caused a transient reduction of viral yields; A dose of 25 µg/ml induced further viral yields, and no evidence viral yields was demonstrated in cells treated with 50 or 250 5 µg/ml ribavirin	
Tignor et al. (25)	In vivo animal model study	Infant mice	Infant mice intraperitoneally infected with CCHF virus were treated with ribavirin	Ribavirin treatment significantly reduced infant mouse mortality, decreased viraemia, and prolonged mean time to death	
Fisher-Hoch et al. (18)	Case study	3 health workers with severe, serologically confirmed CCHF, Pakistan	Ribavirin orally administered at doses of 4 g/day for 4d and then 2.4 g/day for 6 days	All the three patients fully recovered	Limitations: Small sample size, without controls
Mardani et al. (27)	Historical cohort study	187 suspected CCHF cases, 139 treated with ribavirin and 48 as historical controls, of which 81 cases were serologically confirmed, Iran	Ribavirin orally administered within a mean of 4d of onset at the doses of 30 mg/kg as a loading dose, 15 mg/kg q 6h for 4d and 7.5 mg/kg q 8h for 6 days	The fatalities among ribavirin recipients and historical controls for suspected patients were 30.2% and 45.8%, respectively; and those for confirmed patients were 11.6% and 58.3%, respectively	Limitations: Study design was neither randomized, nor placebo-controlled

Ergonul et al. (29)	Observational study	35 serologically confirmed CCHF cases, with 8 cases ribavirin treated, Turkey	Ribavirin orally administered within a mean of 5.5d of onset at the doses of 4g q.d. for 4 days, and 2.4 g q.d. for 6 days	All the 8 severe cases treated with ribavirin survived, while 1 of 22 severe cases who did not receive ribavirin treatment died with a case-fatality of 4.5%	Limitations: Small sample size and non-randomized, non-placebo controlled
Ozkurt et al. (30)	Observational study	60 CCHF cases of which 22 were treated with ribavirin and 38 were as historical controls, Turkey	Ribavirin orally administered immediately after admission at an initial loading dose of 2 g, then 1 g q 4h for 4 days, and then 500 mg q 6h for 6 days	Case-fatality rate was 9.0%(1/22) in the ribavirin group vs. 10.5% (4/38) in the control group (P=0.85); The mean hospitalization time was 7.7d in the ribavirin group and 10.3d in control group (P=0.06)	Limitations: Small sample size and non-randomized, non-placebo controlled; One mild case of haemolytic anaemia recorded