

## ABSTRACT

**Background:** Rhinovirus is a very common cause of respiratory viral infection in the general population and immunocompromised patients; however, data on clinical significance of these infections in HCT recipients remains scarce.

**Material and methods:** In this retrospective study, we examined the epidemiology, demographics, clinical course and outcomes of RhVI diagnosed by RT-PCR in nasal wash samples from 233 HCT recipients at our institution between July 2014 and December 2015.

**Results:** Majority of pts were Caucasians (64%), male (62%), with a median age of 55 years (range: 21- 79) and 60% were allograft recipients with unrelated (59), haploidentical (26), and match-related (73) donors. Of 233 pts, 177 (76%) with upper respiratory tract infection (URI) and 56 (24%) were diagnosed with lower respiratory tract infection (LRI). The frequency of LRI was similar among allogeneic (23%) and autologous (24%) HCT recipients. Nosocomial infection occurred in 25 (11%) pts and the majority within 100 d of HCT (18 [72%]) and before engraftment (14 [56%]). When compared to pts with URI, more pts with LRI had lymphopenia (absolute lymphocyte count <200), hypoxia at presentation (saO<sub>2</sub> ≤92%), nosocomial infection, and were hospitalized (P<0.05, each). Only 2 pts with LRI (1%) died within 30 d from presentation. Among the 119 patients with repeated nasal washes, 60 (50%) had shedding of > 14 d with a median duration of 118 d (range: (16 - 510 days) and occurring in 41/80 (51%) pts with URI and in 19/39 (49%) pts with LRI.

**Conclusion:** Our study showed that despite a high rate of LRI, the subsequent mortality in HCT recipients with RhVI remains relatively low. However, the long duration of shedding and the risk for nosocomial acquisition with subsequent LRI underscore the importance of strict infection control measures in this population.

## BACKGROUND

- Little is known about the clinical significance of Rhinovirus infection (RhVI) in hematopoietic cell transplant (HCT) recipients. RhVI is often associated with upper respiratory tract infection (URI), however recent data suggest it might be associated with severe pneumonia in immunocompromised patients
- Data on the clinical impact of RhVI in HCT patients have been scarce.

## OBJECTIVES

- We aimed to determine the clinical characteristics and outcomes of RhVI among HCT recipients.

## METHODS

- We reviewed the demographics, clinical characteristics and outcomes of all HCT recipients with lab-confirmed RhVI by RT-PCR in nasal wash samples between July 2014 and December 2015.
- Clinical characteristics and outcomes were compared between patients who progressed to LRI versus URI, by utilizing Chi square or Student t test.

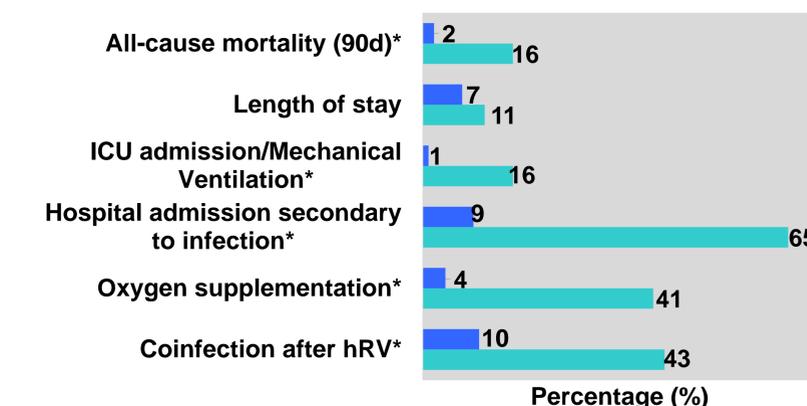
## RESULTS

Table. Baseline Characteristics

		Total (N = 243)	LRI (n = 58)	URI (n = 185)
Age	Median,	55	55	54
	range	(18, 79)	(23, 72)	(18, 79)
Gender	Male	146 (60)	37 (64)	109 (59)
	Female	97 (40)	21 (36)	76 (41)
Type of HCT	Allogeneic	171 (70)	41 (71)	130 (70)
	Autologous	72 (30)	17 (29)	55 (30)
GvHD (acute/chronic)	No	95 (39)	24 (41)	71 (38)
	Yes	148 (61)	34 (59)	114 (62)
Type of infection*	Community	216 (89)	44 (76)	172 (93)
	Nosocomial	27 (11)	14 (24)	13 (7)
Time from HCT to infection (days)	Median, range	349 (-91 - 6355)	371 (2-6355)	329 (-91, 5683)
Lymphopenia* (<200 cells/mm <sup>3</sup> )	No	28 (12)	13 (22)	15 (8)
	Yes	215 (88)	45 (78)	170 (92)
Neutropenia (<500 cells/mm <sup>3</sup> )	No	16 (7)	5 (9)	11 (6)
	Yes	227 (93)	53 (91)	174 (94)
Coinfection prior to RhVI	Yes	42 (17)	14 (24)	28 (15)
Hypoxia at presentation*	Yes	8 (4)	7 (12)	1 (1)
Duration of shedding(days)	Median, range	156 (17- 525)	85 (17- 525)	172 (22 - 510)

\*P value <0.05

## OUTCOMES



\*P value <0.05

■ URI (n = 185) ■ LRI (n = 58)

## CONCLUSIONS

- Our single center retrospective study showed that despite a high rate of complications, the subsequent mortality in HCT recipients with RhV infections remains relatively low.
- However, the long duration of shedding and the risk for nosocomial acquisition with subsequent LRI underscore the importance of strict infection control measures in this population.

## REFERENCES

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