

admission were: CAP 10 (77%), COPD exacerbation 2 (15%) and bronchitis 1 (8%). Non productive cough was present in 46% and bronchospasm in 85%. Mean time of hospitalization was 9 days (R: 4–16) and fever duration 1 day (R: 0–2). The median duration of antibiotic treatment was 9.5 days (R: 4 to 15) No viral nor bacterial coinfections were observed. No early mortality was registered, global mortality was 23% (3 patients). Death was clinically related to RSV infection.

Conclusion: This study suggest that RSV is a relevant respiratory pathogen in the elderly population, with significant associated morbidity and mortality rates. Current treatment is limited to supportive care and prevention to standard infection control practices. A new approach is needed to improve RSV infection management.

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2788. Case Report: Severe Community-Acquired Human Adenovirus 7 Infection in a Mother and Son

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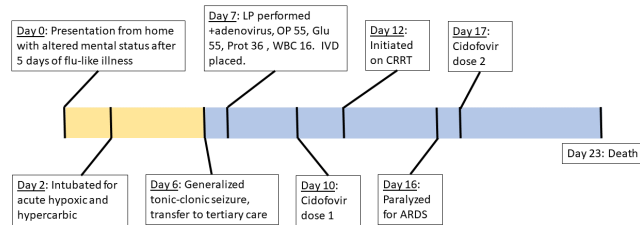
Session: 281. Viral Respiratory Diseases
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Background: We present the case of a 42-year-old male (Patient 1) with a history of morbid obesity and cirrhosis of unclear etiology who died of acute hypoxic respiratory failure and devastating encephalitis after community-acquired infection with human adenovirus 7 (HAdV7) in spite of antiviral treatment with Cidofovir. Patient 1's course is outlined in Figure 1. During his stay, the patient's mother (Patient 2) was also hospitalized in the same unit following a similar presentation with 10 days of flu-like symptoms that progressed to ARDS requiring intubation. Patient 2 recovered from her infection with no specific antiviral treatment.

Methods: N/A.

Results: These cases illustrate particularly fulminant presentations of HAdV7 infection and highlight the high pathogenicity of HAdV7 compared with other adenovirus subtypes. Severe lower respiratory tract HAdV7 infections have been reported most commonly as outbreaks of respiratory illness among military recruits and infants. A notable recent outbreak of HAdV-7d in New Jersey in 2016–2017 resulted in 12 confirmed cases with 4 deaths; however, all deaths occurred in patients with significant medical comorbidities.¹ In a case particularly striking for its similarity to the one presented here, a healthy 44-year-old male along with his 68-year-old father were hospitalized with human adenovirus 7 days infection in Chicago in December 2014, with the son requiring ECMO for ARDS and the father briefly requiring ICU-level care.²

Conclusion: While our patient's case is by no means unprecedented, it does represent an uncommon and potentially serious infection that points to need for continuing nosocomial testing efforts and deserves special attention in outbreak settings. In the future, perhaps use of the extant vaccine for human adenovirus serotypes 4 and 7 (currently licensed for military personnel³) could be expanded for use in civilian populations could be explored and potentially expanded for use in outbreak settings.



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2789. Respiratory Syncytial Disease in Hospitalized Adults: A Retrospective Cohort Study

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Background: Respiratory syncytial virus (RSV) is associated with significant mortality rates amongst hematopoietic stem cell transplant (HSCT) and lung transplant recipients. Although RSV is responsible for ~177,000 hospitalizations and 14,000 deaths annually, few epidemiologic studies including all adults including those with immunocompromise have been conducted over multiple seasons.

Methods: A retrospective cohort study of adults admitted to a large academic medical center in Chicago, IL from 2009 to 2018 was conducted in patients with positive RSV PCR. Specific data on clinical presentation, management, and outcomes were collected by manual chart review. Descriptive statistics were calculated, and Pearson's Chi-Squared test was utilized to assess association between severe disease status and comorbidities.

Results: A total of 140 patients* were admitted during part of the study period (2016–2018) with positive PCR for RSV. Most patients had otherwise underlying

comorbidities prior to admission (lung 44.2%, heart 40.0%, diabetes 20.7%), history of immunocompromise (36.4%, 51) or history of smoking (39.2%, 55). Cough was the most common symptom among all hospitalized adults (90.7%, 127). However, patients with a history of transplant (both HSCT and SOT) more commonly displayed symptoms of fevers at presentation (50%, 10) when compared with non-immunocompromised patients (36.6%, 36). ICU admission occurred in one-third of the hospitalized patients, with no significant difference amongst transplant patients, immunocompromised patients, and non-immunocompromised patients. Need for mechanical ventilation was highest in patients with co-infections. None of the co-morbidities measured were independent risk factors for severe disease. Most patients (78.5%, 110) were discharged home. Among the 12 fatal cases, all were admitted to the ICU with seven (58.3%) requiring mechanical ventilation. Three (25.0%) were immunocompromised while two (16.7%) were HSCT patients, but none were solid-organ transplant patients.

***Ongoing data collection.**

Conclusion: RSV patients were diverse in their demographics, treatment, and outcomes. Large percentages of patients had underlying comorbidities such as immunocompromise due to HSCT, lung and heart disease.

Figure 1. Demographics of Hospitalized Adults

Demographic	2015-2016		2016-2017		2017-2018		Unknown	Total
	RSV A	RSV B	RSV A	RSV B	RSV A	RSV B		
N	16	15	12	36	11	23	27	140
Age (Mean) in years	58.75	68.2	65.91	65.08	65.91	70.09	60.96	64.3
18-59	4 (50.0%)	6 (26.7%)	3 (33.3%)	13 (36.1%)	3 (36.4%)	1 (21.7%)	14 (51.9%)	37 (11.4%)
60-75	4 (25.0%)	6 (40.0%)	3 (33.3%)	12 (33.3%)	3 (27.3%)	8 (34.8%)	7 (25.9%)	44 (31.4%)
>76	1 (25.0%)	5 (33.3%)	3 (33.3%)	11 (30.6%)	4 (36.4%)	4 (43.6%)	11 (40.4%)	64 (44.2%)
Male	11 (68.8%)	6 (40.0%)	8 (66.7%)	33 (33.3%)	4 (36.4%)	9 (39.1%)	12 (44.4%)	62 (44.2%)
Nosocomial RSV	1 (6.3%)	1 (6.7%)	0 (0%)	2 (5.6%)	1 (9.1%)	2 (8.7%)	4 (14.8%)	7 (8.1%)
Underlying Medical Conditions								
Lung Disease	6 (37.5%)	5 (33.3%)	7 (58.3%)	20 (55.6%)	3 (27.3%)	12 (52.2%)	9 (33.3%)	62 (44.2%)
Chemotherapy <30 d	4 (25%)	3 (20.0%)	3 (25.0%)	5 (13.9%)	4 (36.4%)	4 (17.4%)	11 (40.4%)	26 (18.5%)
Diabetes	1 (6.3%)	2 (13.3%)	3 (25%)	10 (27.8%)	3 (27.3%)	5 (21.7%)	4 (14.8%)	29 (20.7%)
Cardiac Disease	3 (18.7%)	3 (33.3%)	6 (50%)	10 (27.8%)	4 (36.4%)	3 (13%)	5 (18.5%)	40 (28.6%)
Rheum Disease	1 (6.3%)	2 (13.3%)	3 (25%)	5 (13.9%)	0 (0%)	2 (8.7%)	5 (18.5%)	12 (8.6%)
Renal Disease	3 (18.7%)	2 (13.3%)	4 (33.3%)	5 (13.9%)	3 (27.3%)	3 (13%)	5 (18.5%)	27 (19.3%)
SOT	6 (37.5%)	0 (0%)	8 (66.7%)	11 (30.6%)	4 (36.4%)	4 (17.4%)	3 (10.7%)	35 (24.9%)
SCT <1 yr	2 (12.5%)	1 (6.7%)	0 (0%)	1 (2.8%)	0 (0%)	1 (4.3%)	1 (3.7%)	6 (4.3%)
SCT with GVHD	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	3 (13%)	3 (10.7%)	4 (2.9%)
Immunosuppressed (excluding SOT and SCT<1yr)	1 (6.3%)	3 (20.0%)	4 (33.3%)	13 (35.9%)	2 (18.2%)	17 (72.9%)	7 (25.9%)	34 (24.3%)
Smoking								
Previous Smoker	5 (33.3%)	4 (26.7%)	9 (75.0%)	27 (75.0%)	2 (18.2%)	6 (26.1%)	5 (18.5%)	41 (29.3%)
Current Smoker	0 (0%)	1 (6.7%)	3 (25.0%)	3 (8.3%)	2 (18.2%)	3 (13%)	2 (7.4%)	14 (10.0%)
Abnormal CXR	5 (33.3%)	9 (60%)	17 (142%)	5 (13.9%)	6 (54.5%)	9 (39.1%)	10 (37%)	61 (43.6%)
Presenting Symptoms								
Cough	16 (100%)	14 (93%)	8 (66.7%)	34 (94.4%)	10 (90.9%)	21 (91.3%)	24 (88.9%)	127 (90.7%)
Nasal Congestion	9 (56.3%)	3 (20.0%)	2 (16.7%)	11 (30.6%)	1 (9.1%)	9 (39.1%)	11 (40.4%)	49 (35.0%)
Rhinorrhea	6 (37.5%)	2 (13.3%)	1 (8.3%)	8 (22.2%)	1 (9.1%)	6 (26.1%)	8 (29.6%)	34 (24.3%)
Sore Throat	0 (0%)	0 (0%)	1 (8.3%)	1 (2.8%)	2 (18.2%)	2 (8.7%)	1 (3.7%)	6 (4.3%)
Headache	0 (0%)	1 (6.7%)	0 (0%)	3 (8.3%)	1 (9.1%)	4 (17.4%)	1 (3.7%)	11 (7.9%)
Fever	8 (50%)	9 (60%)	5 (41.7%)	14 (38.9%)	6 (54.5%)	8 (34.8%)	11 (40.4%)	62 (44.2%)
Chills	0 (0%)	3 (20.0%)	0 (0%)	6 (16.7%)	4 (36.4%)	1 (4.3%)	5 (18.5%)	23 (16.4%)
Myalgia	1 (6.3%)	2 (13.3%)	0 (0%)	3 (8.3%)	3 (27.3%)	3 (13%)	4 (14.8%)	17 (12.1%)
Shortness of Breath	6 (37.5%)	8 (53.3%)	8 (66.7%)	21 (58.3%)	6 (54.5%)	16 (69.6%)	17 (62.9%)	81 (57.8%)

Figure 2. Symptoms and Outcomes by Chronic Disease or Condition

Symptom	Total	Non-Immunocompromised				Immunocompromised due to Transplant				Co-Infection
		Age >65	Lung Disease	Recent Cancer Treatment	Diabetes	Cardiac Disease	Non-Immunocompromised Total	SOT	HSCT (<1 yr) GVHD	
Cough	127 (90.7%)	71 (84.6%)	59 (62.2%)	41 (81.2%)	25 (52.1%)	52 (83.9%)	93 (83.9%)	6 (7.5%)	15 (15.0%)	15 (40.0%)
Nasal Congestion	49 (35.0%)	22 (29.3%)	19 (30.6%)	14 (31.1%)	10 (21.7%)	38 (59.4%)	2 (2.0%)	1 (1.0%)	3 (3.0%)	13 (33.3%)
Rhinorrhea	34 (24.3%)	15 (20.0%)	11 (24.4%)	7 (24.1%)	2 (5.3%)	26 (40.3%)	1 (1.0%)	1 (1.0%)	5 (5.0%)	2 (5.0%)
Sore Throat	6 (4.3%)	1 (1.3%)	1 (2.0%)	1 (2.0%)	1 (2.1%)	4 (6.2%)	0 (0%)	0 (0%)	1 (1.0%)	1 (2.5%)
Headache	11 (7.9%)	6 (8.0%)	4 (8.3%)	3 (8.3%)	2 (4.3%)	7 (10.8%)	0 (0%)	1 (1.0%)	3 (3.0%)	5 (12.5%)
Fever	62 (44.2%)	28 (37.3%)	17 (27.4%)	24 (53.3%)	10 (21.7%)	36 (56.2%)	3 (3.0%)	3 (3.0%)	14 (14.0%)	8 (20.0%)
Chills	23 (16.4%)	10 (13.3%)	6 (12.2%)	5 (13.3%)	2 (4.3%)	15 (22.9%)	1 (1.0%)	1 (1.0%)	4 (4.0%)	9 (22.5%)
Myalgia	17 (12.1%)	9 (12.0%)	4 (8.0%)	3 (8.3%)	1 (2.1%)	11 (16.9%)	3 (3.0%)	0 (0%)	1 (1.0%)	4 (10.0%)
Shortness of Breath	81 (57.8%)	44 (58.7%)	25 (40.3%)	24 (53.3%)	14 (29.2%)	60 (92.5%)	6 (6.0%)	2 (2.0%)	9 (9.0%)	29 (72.5%)
Fatigue	91 (65.0%)	33 (44.0%)	24 (38.7%)	17 (37.5%)	24 (50.0%)	43 (66.2%)	4 (4.0%)	4 (4.0%)	9 (9.0%)	39 (97.5%)
Arrhythmias	1 (0.7%)	1 (1.3%)	1 (2.0%)	0 (0%)	0 (0%)	1 (1.5%)	0 (0%)	0 (0%)	0 (0%)	1 (2.5%)
GI Admission	17 (12.1%)	8 (10.7%)	5 (8.0%)	3 (8.3%)	1 (2.1%)	13 (19.9%)	3 (3.0%)	2 (2.0%)	5 (5.0%)	7 (17.5%)
ICU Admission	33 (23.6%)	15 (20.0%)	12 (18.2%)	12 (26.7%)	4 (8.3%)	29 (44.3%)	4 (4.0%)	1 (1.0%)	5 (5.0%)	17 (42.5%)
ICU Discharge	11 (7.9%)	9 (12.0%)	5 (8.0%)	5 (11.1%)	1 (2.1%)	8 (12.1%)	0 (0%)	0 (0%)	1 (1.0%)	4 (10.0%)
ICU Mortality	12 (8.6%)	4 (5.3%)	3 (4.5%)	2 (4.4%)	3 (6.3%)	8 (12.1%)	1 (1.0%)	1 (1.0%)	2 (2.0%)	4 (10.0%)
Discharged Home	110 (78.5%)	54 (72.0%)	35 (55.6%)	23 (50.0%)	10 (21.7%)	78 (119.5%)	7 (7.0%)	13 (13.0%)	15 (15.0%)	32 (80.0%)
Discharge to Outside Healthcare Facility	18 (12.9%)	14 (18.7%)	6 (9.1%)	7 (15.6%)	1 (2.1%)	14 (21.4%)	1 (1.0%)	1 (1.0%)	3 (3.0%)	8 (20.0%)

Definitions: HSCT – hematopoietic stem cell transplant within the past year; CKD – any diagnosed stage of chronic kidney disease or end-stage renal disease; SOT – any history of solid organ transplant (e.g. kidney, liver); Co-infection – any concurrently documented infection.

Disclosures. All authors: No reported disclosures.