Background

• The effects of HIV positivity on influenza like illness (ILI) are not well described since the HAART era. Pre-HAART, most community viral infections were no more severe in HIV infected children. Recent reports among patients with HIV hospitalized with influenza A(H1N1) revealed no differences in clinical severity.

• There has been no similar analysis of ILI severity in an HIV-adult, otherwise healthy, predominantly outpatient cohort.

Methods

• Since 2009, we enrolled otherwise healthy military personnel and beneficiaries into an observational, longitudinal study of ILI. All military personnel and beneficiaries consented to enrollment and were given a health history questionnaire and a daily symptom diary (Figure 1).

• Participants were trained by research personnel on the definitions of each score. Swabs were tested for influenza B by nucleic acid amplification testing of nasopharyngeal specimens.

• Symptom presence and severity was recorded either by self-report (diary) or interview as of: 0 (none); 1 (mild); 2 (moderate); and 3 (severe). Participants were trained by research personnel on the definitions of each score. Swabs were tested for influenza by real-time reverse transcription polymerase chain reaction (RT-PCR) at the Naval Health Research Center (San Diego, CA).

• Composite measures were the sum of individual symptom scores in the following categories: (1) lower respiratory symptoms: cough, breathing difficulty, hoarseness and chest pain; (2) upper respiratory symptoms: sore throat, runny nose, sore throat and sneezing; (3) systemic symptoms: chill, muscle ache, headache and fatigue; (4) total severity: sum of the above three categories.

Results

• 957 adults were enrolled, 72 (7.5%) of which were HIV positive.

• HIV positive enrollees were more likely to be male, older, active duty and former smokers. (Table 1)

• There were no differences in ethnicity.

• Analysis of clinical outcomes did reveal some important differences between HIV positive and negative enrollees.

• On univariate analysis, HIV positive enrollees were more likely to be hospitalized, more likely to report use of antibiotics and more likely to be diagnosed with pneumonia. (Table 2)

• On multivariate analysis HIV positive enrollees:

- Had higher rates of hospitalization (aOR 2.72; 95% CI 1.02-7.21)
- Reported increased use of antibiotics (aOR 2.22; 95% CI 1.27-3.88)
- Had no statistical difference in rates of diagnosis of pneumonia (aOR 1.95; 95% CI 0.67-5.86).

• In general, reported individual and composite symptom severity at enrollment was similar in both groups (Tables 3 and 4).

• HIV-negative enrollees were more likely to report cough, sore throat and runny nose on individual symptom severity. Additionally, they reported higher upper respiratory composite scores.

• HIV positive enrollees were more likely to report diarrhea, itchy eyes, muscles aches and fatigue.

Conclusions

• In general, symptom severity was similar between HIV positive and HIV negative enrollees.

• HIV negative enrollees did report more severe individual and composite upper respiratory symptoms.

• HIV positive reported more individual GI and systemic symptoms.

• Figure 1. Distribution of CD4 percent the day of ARIC enrollment and on visit 4 (day 28).

• Figure 2. Distribution of CD4 percent the day of ARIC enrollment and on visit 4 (day 28).

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Christina Schofield MD,1 Mary Fairchok MD1,2, Deepika Mor MS3,3, Wei-Ju Chen PhD,3,3, Patrick J. Danaher MD,4 Tahananiy N. Lalani MD,5 Timothy H. Burgess MD MPH,6 Michalne Riddle MS3,3, John C. Arnold MD,7 and Eugene V. Millar PhD,3,5

1. Madigan Army Medical Center, Fort Lewis WA; 2. Infectious Disease Clinical Research Program, Department of Preventive Medicine and Biostatistics. Uniformed Services University, Bethesda MD; 3. Henry M. Jackson Foundation for the Advancement of Military Medicine, 4. San Antonio Military Health System, San Antonio TX; 5. Naval Medical Center Portsmouth VA; 6. Walter Reed National Military Medical Center, Washington DC; 7. Naval Medical Center San Diego CA