Background: Previous studies have evaluated the risk of developing herpes zoster (HZ) in patients with chronic obstructive pulmonary disease (COPD), but little is known about the impact of an acute HZ episode on healthcare resource utilization (HCRU) and costs among patients with COPD and HZ vs. without HZ. HZ vaccination may potentially reduce this burden among patients with COPD, with (Cohort A) and without (Cohort B) HZ episodes, were identified (Fig. 1). COPD and HZ were identified using ICD-9 and ICD-10 diagnosis codes.

Methods: A retrospective cohort study of individuals ≥50 years of age was conducted using administrative claims data from Optum Clinformatics for commercially insured and Medicare Advantage members (01/01/2013 – 12/31/2018). Two cohorts of patients with COPD, with (Cohort A) and without (Cohort B) HZ episodes, were identified (Fig. 1). COPD and HZ were identified using ICD-9 and ICD-10 diagnosis codes. All-cause HCRU rates were compared between cohorts using adjusted incidence rate ratios (IRRs), calculated using generalized linear models assuming a negative binomial distribution. Differences in all-cause costs were estimated by fitting a two-part model with a logit model in the first part and a gamma distribution for the second part. Potential differences between cohorts were accounted for by propensity scores, calculated using patients’ demographics and clinical characteristics at baseline and included as a covariate in multivariable regression analyses.

Results: Among patients with COPD, 3,415 patients with HZ (mean age [standard deviation]=73.2 [9.0] years) and 35,360 without HZ (72.4 [9.4] years) were identified. Compared to patients with COPD but without HZ, patients with COPD and HZ had an increased rate of all-cause outpatient visits (adjusted IRR=1.18; 95% confidence interval [CI]=1.15–1.22; p<0.001) and Emergency Department visits (1.28; 1.20–1.35; p<0.001) as well as higher all-cause total costs (adjusted cost difference, per patient per month [PPPM]=$313; 95% CI=$110–536; p<0.004), in the first year of the observation period. All-cause mean costs PPPM and differences between cohorts were higher closer to the date of HZ diagnosis (or an imputed date for Cohort B, Fig. 2).

Conclusion: HCRU and cost burden is higher in patients ≥50 years old with COPD and HZ vs. without HZ. HZ vaccination may potentially reduce this burden among patients with COPD.

Disclosures: GlaxoSmithKline Biologicals SA (GSK study identifier: HO-19-19749) • Poster Abstracts

Session: P-2. Adult Vaccines

25. Effectiveness of High Dose Influenza Vaccine in HIV-positive Patients for the Winter 2017–2018 Season

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Background: Antibody response after high dose influenza vaccine (HDIV) approved for age ≥65 years, is superior to a standard-dose vaccine in HIV-infected persons. We report the effectiveness data of HDIV compared to the standard dose quadrivalent vaccine (SDIV) in our HIV clinic.

Methods: We conducted a retrospective cohort study at the University of Kansas Medical Center to evaluate the effectiveness of HDIV in HIV-infected patients during the 2017–2018 influenza season. A phone survey was utilized to verify vaccination status and interval development of influenza-like illness (ILI). A modified CDC definition of ILI (mCDC ILI = fever and cough, sore throat or shortness of breath (SOB)) and a broader protocol defined ILI (PD ILI = sore throat, cough or SOB with either fever, chills, headache or myalgia) were utilized. The electronic medical record was reviewed to confirm vaccine type and influenza testing when available.

Results: Of 560 HIV-infected patients in the clinic, 219 (39.1%) were available and willing to participate (197 males, 21 females, 1 transgender female). The median age was 53 years and BMI 27.2 kg/m². Five percent had CD4<200 cells/µL, and 13.7% had an HIV viral load >40 copies/mL. HDIV was given to 119 (54.3%), SDIV to 77 (35.2%) and 23 (10.5%) were not vaccinated (Table 1). A mCDC ILI occurred in 8 (10.4%) in the SDIV group compared to 6 (5.0%) in the HDIV group (p=0.16). A PD ILI was reported in 16 (20.8%) in the SDIV group compared to 12 (10.1%) in the HDIV group (p=0.04). There was no difference in confirmed influenza cases between the two groups (Table 2). On logistic regression only vaccine dose (SDIV OR 2.34 95% CI 1.04–5.37, p=0.04) and age in years (OR 0.97, 95% CI 0.94–1.0, p=0.045) were associated with PD ILI. HDIV remained protective after adjustment for age. Vaccine side effects were mild and occurred in 11/77 (14.3%) in the SDIV group compared to 13/119 (10.9%) in the HDIV group (p=0.5).

Table 1. HIV Patients characteristics and influenza vaccine status winter 2017-2018

| Characteristics | High-dose vaccine | Standard vaccine | Not vaccinated |
|-----------------|-------------------|------------------|---------------|
| n=219           | n=77              | n=23             |
| Male            | 106 (80.1%)       | 71 (92.2%)       | 20 (87.0%)    |
| Female          | 12 (10.1%)        | 6 (7.9%)         | 3 (13.0%)     |
| Age, mean years | 49.9              | 46.0             | 46.0          |
| Age 48-59 years| 52 (43.7%)        | 27 (35.1%)       | 9 (39.1%)     |
| Age 50-64 years| 47 (39.9%)        | 46 (59.7%)       | 12 (52.2%)    |
| BMI, mean kg/m² | 27.4              | 27.7             | 27.3          |
| BMI ≥30 kg/m²  | 2 (1.9%)          | 3 (6.5%)         | 0 (0.0%)      |
| CD4 ≥200 copies/µL | 4 (3.4%) | 5 (5.6%) | 0 (0.0%) |
| CD4 200-500 copies/µL | 22 (27.2%) | 16 (20.8%) | 5 (21.7%) |
| CD4 <200 copies/µL | 78 (73.9%) | 86 (72.2%) | 16 (69.6%) |
| VL viral load >40 copies/mL | 12 (15.6%) | 8 (10.4%) | 0 (0.0%) |
| BMI = body mass index |  |  |  |

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Table 2. Influenza-like illness in HIV patients winter 2017–2018

|                      | Not vaccinated n=23 | Standard vaccine n=77 | High-dose vaccine n=129 | p-value* |
|----------------------|---------------------|-----------------------|-------------------------|----------|
| Confirmed influenza  | 0 (0.6%)            | 2.6 (2.6%)            | 4.3 (4.1%)              | 1.00     |
| No influenza         | 23 (100.0%)         | 75 (97.4%)            | 125 (96.6%)             |          |
| Modified CDC ILI     | 0 (0.0%)            | 8 (10.4%)             | 6 (5.0%)                | 0.16     |
| No-modified CDC ILI  | 23 (100.0%)         | 69 (89.5%)            | 113 (94.9%)             |          |
| Protocol defined ILI | 5 (19.7%)           | 16 (20.8%)            | 12 (10.5%)              | 0.04     |
| No protocol defined  | 20 (80.7%)          | 61 (79.2%)            | 107 (89.9%)             |          |

IL = Influenza-like Illness; CDC = Center for Disease Control

*p-value, comparing standard vs high-dose vaccines

Methods: Patients identified from a large US commercial administrative claims database (Optum Research Database) with continuous enrollment for ≥6 months after appearance of an incident high-risk diagnosis through the end of the study period (3/31/2018) were considered eligible (Figure). Cox proportional hazards regression models were used to identify factors associated with time to receipt of ≥1 dose of MenACWY between their index date and the end of the study period. A strong association between receipt of MenACWY and pneumococcal vaccines was seen for CD hazard ratio (HR): 3.2, 95% CI: 1.8–5.7 and HIV [23.0; 13.9–38.1]. Age (11–18 years; for CD only) and having a well-care visit after the index date (for CD and HIV) was associated with higher likelihood of vaccination. Vaccination rates for HIV were lowest in the South.

Conclusions: The association of MenACWY vaccination with age in patients with CD suggests confusion between routine age-based and high-risk recommendations, whereas in patients with CD or HIV, the association with pneumococcal vaccines suggests that providers recognize the overlap in risk factors for IMD and pneumococcal disease. Ensuring healthcare access for these vulnerable patients and educating providers about high-risk recommendations is crucial.

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26. Factors Associated with Meningococcal Vaccination among Patients with Newly Diagnosed High-Risk Conditions

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Session: P-2. Adult Vaccines

Background: Vaccination is recommended for persons at increased risk for invasive meningococcal disease (IMD) due to complement component deficiency (CD), asplenia or human immunodeficiency virus (HIV) infection. However, uptake of quadrivalent conjugate and polysaccharide meningococcal vaccines (MenACWY) one year following a new high-risk diagnosis is very low (doi:10.1093/ofid/ofz360.2403). This retrospective cohort study identified factors associated with MenACWY vaccination among patients newly diagnosed with CD or HIV.

Methods: Patients identified from a large US commercial administrative claims database (Optum Research Database) with continuous enrollment for ≥12 months before and 26 months after appearance of an incident high-risk diagnosis through the end of the study period (3/31/2018) were included eligible (Figure). Cox proportional hazards regression models were used to identify characteristics associated with receipt of ≥1 dose of MenACWY during time periods corresponding with Advisory Committee on Immunization Practices (ACIP) recommendations.

Results: The CD cohort consisted of 1,470 (mean=49.9 years of age) patients and the HIV cohort of 1,208 (38.8 years). Only 7.9% and 20.8% of patients with CD or HIV, respectively, received ≥1 dose of MenACWY between their index date and the end of the study period. A strong association between receipt of MenACWY and pneumococcal vaccines was seen for CD (Hazard ratio (HR): 3.2, 95% CI: 1.8–5.7) and HIV (23.0; 13.9–38.1). Age (11–18 years; for CD only) and having a well-care visit after the index date (for CD and HIV) was associated with higher likelihood of vaccination. Vaccination rates for HIV were lowest in the South.

Conclusion: The association of MenACWY vaccination with age in patients with CD suggests confusion between routine age-based and high-risk recommendations, whereas in patients with CD or HIV, the association with pneumococcal vaccines suggests that providers recognize the overlap in risk factors for IMD and pneumococcal disease. Ensuring healthcare access for these vulnerable patients and educating providers about high-risk recommendations is crucial.

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27. Hepatitis B Virus Screening and Vaccination in Patients with HIV: A Survey of Physicians’ Current Clinical Practices

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Session: P-2. Adult Vaccines

Background: Hepatitis B virus (HBV) and HIV co-infection is associated with high morbidity and mortality, but data and guidelines vary in terms of the best vaccination, re-vaccination, and monitoring practices. The purpose of this study was to evaluate the current HBV monitoring and vaccination practices of physicians who care for patients living with HIV.

Methods: A Web-based survey was distributed to the University of California San Diego (UCSD) Infectious Diseases division via the UCSD ID Intranet, Infectious Disease Society of America (IDSA) members via the IDEA Exchange listserv, and to ID and HIV social network members via Twitter and Facebook. The survey consisted of demographic questions followed by two sets of case-based questions. The case questions focused on type, timing, and dosage of HBV vaccination administration among people living with HIV, HBV monitoring post-vaccination, and clinical approach to patients with isolated hepatitis B core antibody.

Results: A total of 67 clinicians from 24 states completed the survey (Table 1). Most (55%) provide care for more than 20 patients living with HIV per month. The majority of participants (82%) would not defer HBV vaccination until HIV viremic suppression. Almost half of participants (43%) indicated they would use Hepatitis B over other HBV vaccine formulations (Energix-B or Recombivax-HB) for initial vaccination of susceptible patients. The majority (88%) would repeat a vaccination series if the patient does not seroconvert; 23% would repeat with a standard dose series of Energix-B or Recombivax-HB, 24% with a double dose series of Energix-B or Recombivax-HB, and 45% would repeat with Hepatitis B. Approach to management of a patient living with HIV with isolated hepatitis B core antibody was varied. The majority would check a HBV DNA level (42%), while 25% would initiate a vaccination series and 24% would not pursue further intervention (Table 2).