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

|                          | Not vaccinated | Standard vaccine | High-dose vaccine | p-value* |
|--------------------------|---------------|------------------|-------------------|---------|
| Confirmed influenza      | 0 (0.0%)      | 2 (2.6%)         | 4 (4.9%)          | 1.00    |
| No influenza             | 23 (200.0%)   | 75 (19.4%)       | 115 (28.6%)       |         |
| Modified CDC ILI         | 0 (0.0%)      | 8 (10.4%)        | 6 (8.0%)          | 0.16    |
| No modified CDC ILI      | 23 (200.0%)   | 69 (18.9%)       | 113 (28.9%)       |         |
| Protocol defined ILI     | 5 (14.7%)     | 16 (20.8%)       | 12 (18.5%)        | 0.04    |
| No protocol defined ILI  | 20 (67.6%)    | 61 (79.2%)       | 107 (89.9%)       |         |

IL-1: Influenza-like Illness, CDC Center for Disease Control
*p-value, comparing standard vs high-dose vaccines
* Fisher’s exact test

Conclusion: During the 2017–2018 winter season, the CDC reported an influenza attack rate of 14.7% in adults in the US and overall vaccine effectiveness of 58%. Our study demonstrated a 50% reduction in ILI with the HDIV compared to the standard-dose vaccine in HIV-infected patients. A larger prospective randomized control trial is warranted.

Disclosures: Wissam El Atrouni, MD, Viiv (Advisor or Review Panel member)

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 considered eligible (Figure). Cox proportional hazards regression models were used to identify characteristics associated with time to receipt of ≥1 dose of MenACWY during time periods corresponding with Advisory Committee on Immunization Practices (ACIP) recommendations.

Figure: Study Design Schematic

Results: The CD cohort consisted of 1,470 (mean=40.9 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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Disclosures: Parinaz Ghaswalla, PhD, ORCID: 0000-0002-2883-5590, GlaxoSmithKline (Employee, Shareholder) Lindsay Bengtson, PhD, MPH; Optum (Employee, I am an employee of Optum. Optum was paid by GSK for this work. My employment at Optum is not contingent upon this work.) Gary S. Marshall, MD, GlaxoSmithKline (Consultant, Scientific Research Study Investigator); Merck (Consultant, Scientific Research Study Investigator); Pfizer (Consultant, Scientific Research Study Investigator); Sanofi Pasteur (Consultant, Grant/Research Support, Scientific Research Study Investigator, Honorarium for conference lecture); Seqirus (Consultant, Scientific Research Study Investigator); Ami R. Buikema, MPH; Optum (Employee, I am an employee of Optum. Optum was paid by GSK for this work. My employment at Optum is not contingent upon this work.) Tim Bancroft, PhD, Optum (Employee, I am an employee of Optum. Optum was paid by GSK for this work. My employment at Optum is not contingent upon this work.) Krista Schladweiler, PhD; Optum (Employee, I am an employee of Optum. Optum was paid by GSK for this work. My employment at Optum is not contingent upon this work.) Elena Koep, MS; Optum (Employee, Patricia Novy, PhD, GSK (Employee, Shareholder) Cosmina Hoga, PhD, GlaxoSmithKline (Employee, Shareholder)

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 listserv, 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 clinician 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 HepBancs-B over older 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 HepBancs-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% to management of a patient living with HIV with isolated hepatitis B core antibody.

Disclosures: Elizabeth Hastie, MD; Darcy Wooten, MD (Employee, I am an employee of UCSD. UCSD was paid by GSK for this work. My employment at UCSD is not contingent upon this work.) Patricia Novy, PhD, GSK (Employee, Shareholder) Cosmina Hoga, PhD, GlaxoSmithKline (Employee, Shareholder)
Three Phase 2/3 Trials

28. Immunogenicity of rVSVΔG-ZEBOV Ebola Vaccine (ERVEBO™) in Participants by Age, Sex, and Baseline GP-ELISA Titer: A Post Hoc Analysis of Three Phase 2/3 Trials

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Session: P-2. Adult Vaccines

Background: The recent Ebola virus disease (EVD) outbreak in the Democratic Republic of the Congo highlights the sustained threat of EVD morbidity and mortality where healthcare and vaccine delivery are challenging. ERVEBO™, a live recombinant vesicular stomatitis virus (VSV) vaccine containing the Zaire ebolavirus glycoprotein (GP) in place of the VSV GP (rVSVΔG-ZEBOV-GP), was developed by Merck & Co., Inc., Kenilworth, NJ, USA in collaboration with multiple partners to prevent EVD and has been approved for human use in several countries.

Methods: We pooled data from three Phase 2/3 clinical trials conducted in Guinea (FLW), Sierra Leone (STRIVE), and Liberia (PREVAIL) during the 2013–2016 West African outbreak to assess immune responses using a validated assay in each of the three studies and performed a post hoc analysis by sex, age (18–50 years and >50 years) and baseline (BL) GP enzyme-linked immunosorbent assay (ELISA) titer (>200 and ≥200 EU/mL). The full analysis set (FAS) population included the primary immunogenicity populations (all vaccinated participants with serology data collected within an acceptable data range) from all three trials. The endpoints were total IgG antibody response (EU/mL) measured by the GP-ELISA and neutralizing antibody response measured by the plaque reduction neutralization test (PRNT) to rVSVΔG-ZEBOV-GP at Days 14, 28, 180, and 365 postvaccination.

Results: The overall population and in all subgroups, GP-ELISA and PRNT geometric mean titers increased from BL, with most peaking at Day 28 and persisting through Day 365. There were differences between males and females and between participants with BL GP-ELISA < 200 and ≥ 200 EU/mL. There did not appear to be a difference between age groups.

Conclusion: These data demonstrate that rVSVΔG-ZEBOV-GP elicits a robust and durable immune response up to 12 months in participants regardless of age, sex, or BL GP-ELISA titer. The higher immune responses observed in females and participants with preexisting immunity are consistent with those described in published literature for other vaccines.

Disclosures: Jakub Simon, MD, MS, Merck Sharp & Dohme Corp, a subsidiary of Merck & Co, Inc, Kenilworth, NJ, USA (Employee, Shareholder) Stephen Kennedy, MD, Merck & Co., Inc., Kenilworth, NJ, USA (Employee, Shareholder) Sheri Dubey, MS, Merck Sharp & Dohme Corp, a subsidiary of Merck & Co, Inc., Kenilworth, NJ, USA (Employee, Shareholder) Rebecca Grant-Klein, PhD, Merck Sharp & Dohme Corp, a subsidiary of Merck & Co, Inc., Kenilworth, NJ, USA (Employee, Shareholder) Ken Liu, PhD, Merck Sharp & Dohme Corp, a subsidiary of Merck & Co, Inc., Kenilworth, NJ, USA (Employee, Shareholder) Jonathan Hartzel, PhD, Merck Sharp & Dohme Corp, a subsidiary of Merck & Co, Inc., Kenilworth, NJ, USA (Employee, Shareholder) Mary Hanson, PhD, Merck Sharp & Dohme Corp, a subsidiary of Merck & Co, Inc., Kenilworth, NJ, USA (Employee, Shareholder) Rebecca Grais, PhD, Merck Sharp & Dohme Corp, a subsidiary of Merck & Co, Inc., Kenilworth, NJ, USA (Scientific Research Study Investigator)

29. Impact of Enhanced Influenza Vaccines on Direct Healthcare Costs for the U.S. Elderly: A Comprehensive Real-World Evaluation of Adjuvanted Trivalent Influenza Vaccine Compared to Trivalent High-Dose Influenza Vaccine for the 2018–2019 Influenza Season

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Session: P-2. Adult Vaccines

Background: Influenza generates a substantial economic burden ($32 billion annually) due to direct medical costs such as physician office visits or hospitalizations, especially among the elderly. Recent published literature for the 2018–2019 influenza season has demonstrated similar clinical effectiveness between adjuvanted trivalent influenza vaccine (aTIV) and trivalent high dose influenza vaccine (TIV-HD).

This research aimed to assess the annualized mean all-cause and influenza-related healthcare costs among subjects 65+ years vaccinated with aTIV or TIV-HD during the 2018–2019 influenza season.

Methods: A retrospective cohort analysis was conducted using professional fee, prescription claims and hospital charge master data in the U.S. Baseline characteristics included age, gender, payer type, region, Charlson Comorbidity Index, comorbidities, indicators of frail health status, and pre-index hospitalization rates. Treatment selection bias was adjusted through 1:1 propensity score matching (PSM). Economic outcomes included annualized mean all-cause costs and influenza-related costs, which comprised influenza-related hospitalizations, emergency room (ER) visits, and physician office visits costs. Mean costs were compared using paired t-test. Adjusted analyses were conducted using generalized estimating equation (GEE) models, with two-part models for influenza related costs. With the GEEs, adjustment for outliers